VOL. CCXXXII, No. 3020
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THE SPHERE
With which is incorporated "BLACK & WHITE"
FEBRUARY 15, 1958

The SPHERE

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— THE WORLD'S NEWS IN PICTURES

CANADA'S TRADE CHALLENGE TO BRITAIN

SPECIAL ILLUSTRATED SECTION IN THIS ISSUE

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"South Africa for a glorious holiday!"

SAYS THE WIDELY TRAVELLED WOMAN

It's simply marvellous to slip away from the discomforts of the European climate and bask luxuriously in the heavenly warmth of South African sunshine.

Naturally there's more than sunshine to make this a wonderful holiday country. If you're the energetic type you'll revel in the excitement of the game reserves and enjoy all sorts of open air sports in ideal conditions.

If more sophisticated pleasures have a greater appeal to you, there are fashionable resorts all along the coast with a gay social round, as well as the many attractions of modern cities like Johannesburg.

You can't possibly be dull in South Africa. A friendly welcome greets you wherever you go and the day-long sunshine gives zest to everything you do.

Weighty denizens of the Game Reserve.

Fascinating studies for your camera.

A fine example of an old Cape Dutch homestead.

SATOUR

The South African Tourist Office is at your service for free, friendly and helpful advice.

For detailed information on transport, accommodation and costs consult your Travel Agent or South African Railways Travel Bureau, South Africa House, Trafalgar Square, London, W.C.2

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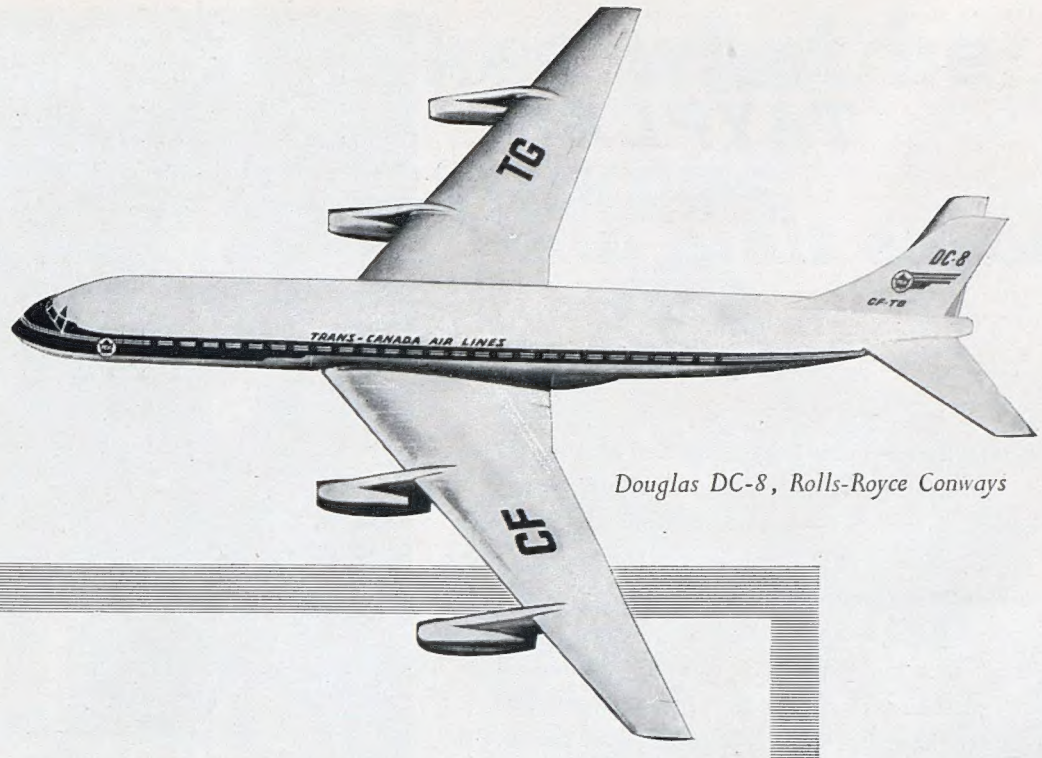
South Africa

LAND OF SUNNY CONTRASTS



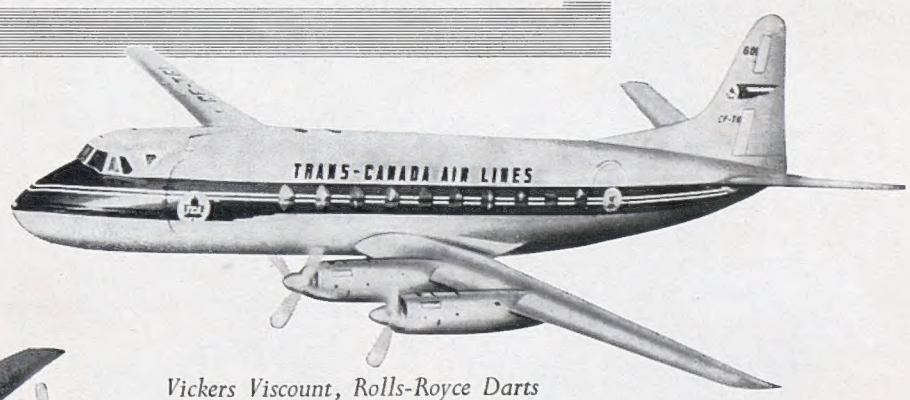
Douglas DC-8, Rolls-Royce Conways

TRANS-CANADA AIR LINES

have chosen

ROLLS-ROYCE
GAS TURBINES

to power their all-turbine fleet of short, medium and long range airliners which will be in service by 1961



Vickers Viscount, Rolls-Royce Darts

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Call in TAYPLAN service at the inception of your new scheme.

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OFFSHORE...

On offshore sites, from Venezuela to the Persian Gulf and to Borneo, Paxman drilling engines are giving unfailing service on platform and tender, proving once again that they are the answer to the driller's need for flexible and dependable power.

SIX MILES OFFSHORE IN THE GULF OF PARIA Oweco Type Ideal 50 draw-works with two Oweco size C.350 slush pumps powered by four Paxman Drilpak sets of 1,600 total continuous shaft horse-power. Owners: Trinidad Northern Areas Ltd. Operators: The United British Oilfields of Trinidad Ltd.

PAXMAN DIESEL ENGINES FOR OILFIELD DUTY

7" BORE RANGE 128 to 800 S.H.P. Fluid coupling, torque converter, power-take-off clutch or diesel-electric drive. Interchangeability of wearing parts.

9¾" BORE RANGE 450 to 1,750 S.H.P. Fluid coupling or diesel-electric drive. Fabricated steel construction. Power to spare for the largest outfit.

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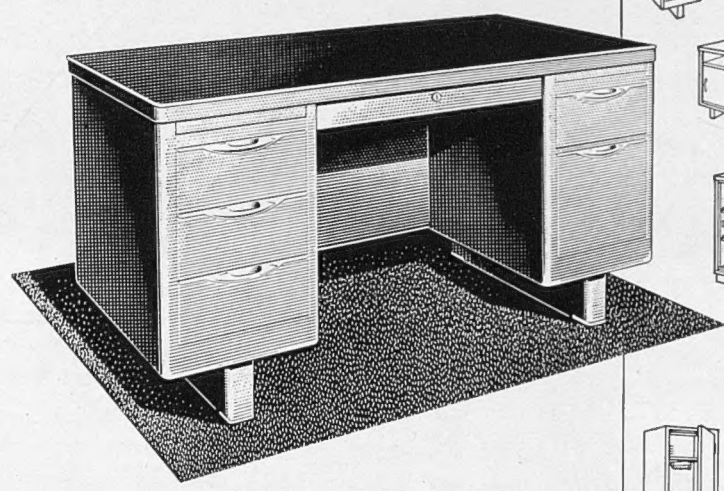
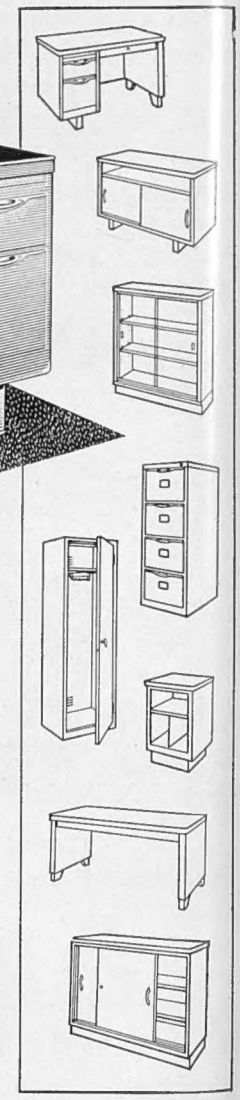
Ample stocks of Paxman spares are also held by RUSTON & HORNSBY LTD. P.O. Box 25, No. 2, Paxman Road, Islington, Toronto 18, Ontario.

J31

Not just a desk . . .





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If you wish your office to look impressive as well as efficient, the new 400-Style Suite is the answer. A basic design of exceptional merit has been adapted to a full range of complementary units. These provide for the utmost flexibility in modern office furnishing whilst maintaining harmony and dignity throughout. Immaculately styled ; many interesting features ; robustly constructed.
Please ask for Brochure SE999.

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a matching suite of office furniture in steel

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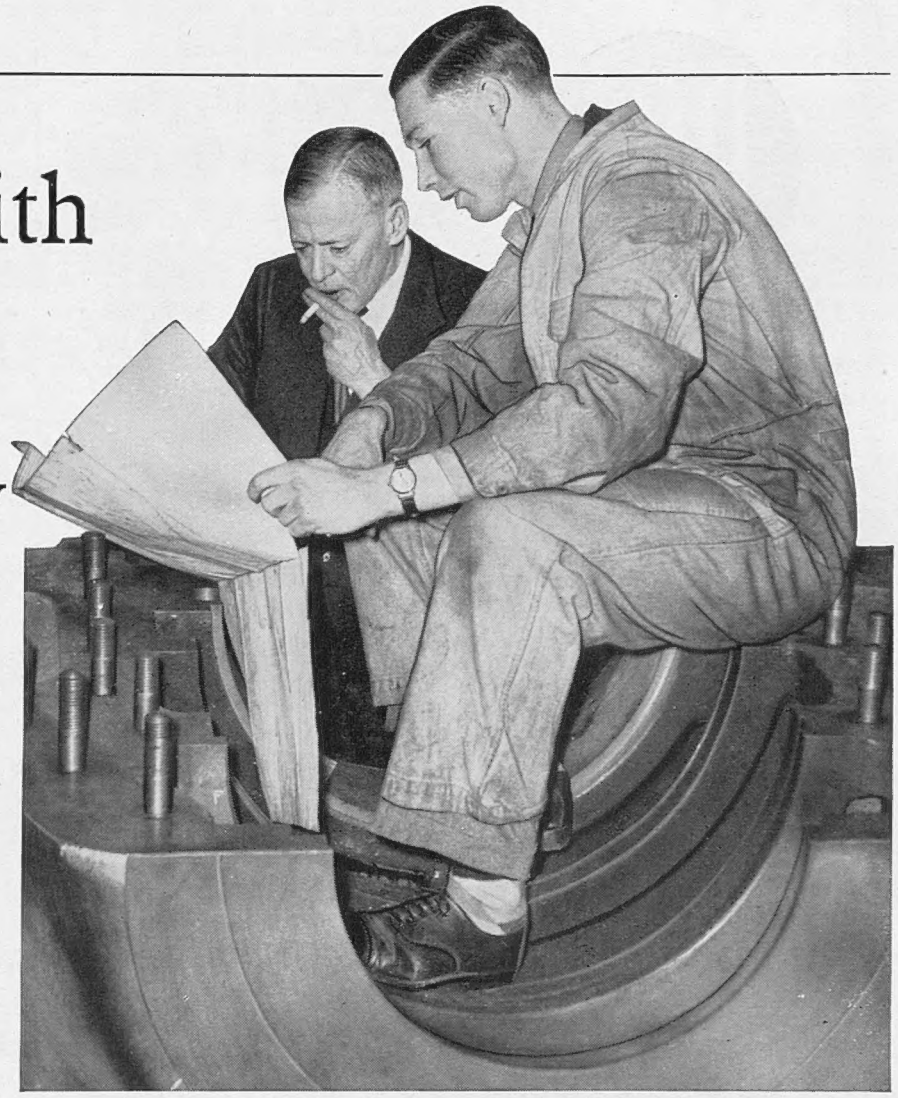
HARVEY

A power utility chief likes what he sees at METROPOLITAN-VICKERS

Generating plant with over 1,900 MW capacity ordered by Canada since 1950



Our photograph shows Mr. G. A. Gaherty, President of the Montreal Engineering Company Limited and a member of the Canadian Trade Delegation, studying the plans for a turbine-generator being built for his Company at the Trafford Park Works of Metropolitan-Vickers. This is one of a series of contracts for generating equipment now totalling over 1,900 MW placed with the company by Canada since 1950.

Metropolitan-Vickers equipment is now installed or on order for eight of the ten Canadian provinces.
The Company has over fifty years' experience in the design and construction of turbine-generators. Most of the generating sets for Canada will be supplied complete with condensers and feed heating plant. The award of these contracts in the face of intense world competition, including tenders from the United States and Germany, demonstrates Canada's confidence in the experience and design leadership of Metropolitan-Vickers in carrying out the country's ambitious power development programme.

IN ONTARIO
one steam turbine-generator has been ordered from Metropolitan-Vickers by the province's Hydro-Electric Power Commission for the N.P.D. Des Joachims Power Station.

IN ALBERTA
the contract for two 66 MW turbine-generators and two 150 MW generators was awarded to Metropolitan-Vickers by Montreal Engineering Company Limited on behalf of Calgary Power Limited for installation at Wabamun Power Station.

IN BRITISH COLUMBIA
one of the largest orders for steam turbine-generators ever placed by an overseas buyer in this country was secured by Metropolitan-Vickers Export Company Limited. It comprises four 150 MW turbine-generator sets with all associated equipment for Burrard Thermal Generating Station, Vancouver. The advanced design, efficient service and early delivery offered by Metropolitan-Vickers influenced the award of this important contract.

IN NEWFOUNDLAND
a 10 MW generating set was designed and built by Metropolitan-Vickers for St. John's Power Station. The contract will also include a further 20 MW turbine-generator.

IN NOVA SCOTIA
22 MW and 27.5 MW Metropolitan-Vickers turbine-generators were supplied for Halifax Power Station.

IN MANITOBA
a contract for four 33 MW Metropolitan-Vickers steam turbine-generators for the Brandon Power Station was placed by the Manitoba Hydro-Electric Board.

IN SASKATCHEWAN
one 30 MW Metropolitan-Vickers turbine-generator has been installed at Estevan Power Station.

IN QUEBEC
four 138 MW hydro-electric generators were built by Metropolitan-Vickers for the Bersimis-Lac Casse development of the Quebec Hydro-Electric Commission.

METROPOLITAN-VICKERS
ELECTRICAL CO LTD · TRAFFORD PARK · MANCHESTER, 17

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B·O·L

TONNAGE OXYGEN AND GAS SEPARATION PLANT

SHELL

SHELL

NEW INSTALLATIONS

AT SHELLHAVEN ON THE THAMES ESTUARY

The British Oxygen Linde plant is in course of erection. Plant capacity: 240 tons of oxygen and 235 tons of nitrogen a day for the manufacture of ammonia.

FOR SHELL CHEMICALS AT PARTINGTON, LANCS.

Work on this plant for the direct oxidation of ethylene will shortly be completed. British Oxygen Linde plant capacity: oxygen 145 tons a day, nitrogen 55 tons a day.

FOR THE IRON AND STEEL WORKS AT DURGAPUR

In India. An order has recently been placed with British Oxygen Linde to supply 2 Tonnage Oxygen units with a total capacity of 100 tons a day.

FOR THE IRON AND STEEL WORKS AT ROUKELA

In India. 3 British Oxygen Linde units have been ordered, each with a capacity of 100 tons of oxygen a day.

AE&CI

FOR AFRICAN EXPLOSIVES AND CHEMICAL INDUSTRIES LIMITED

at Modderfontein. British Oxygen Linde plant has been ordered with a daily output of 275 tons of oxygen and 285 tons of nitrogen for the manufacture of ammonia.

OUR EXPERIENCE IS AT YOUR SERVICE

If you are thinking of installing tonnage oxygen or gas separation plant, consult BRITISH OXYGEN LINDE. Our advice is free and your enquiries, however preliminary will be welcome.

BRITISH OXYGEN LINDE LIMITED

BRIDGEWATER HOUSE,
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Tel: WHI 1688

The year was 1833

In 1833 the "Royal William", launched at Quebec two years earlier, made history by being the first vessel to use steam throughout an entire crossing of the Atlantic.

In 1833 The Standard Life Assurance Company, established in Edinburgh eight years earlier, made history by being the first company to transact life assurance business in Canada.

Today, Standard Life offices in more than a dozen cities and towns continue to serve Canadians who come to us with their life assurance problems and we can claim with confidence that those who come to us come to *rely* on us.

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Established in Scotland in 1825

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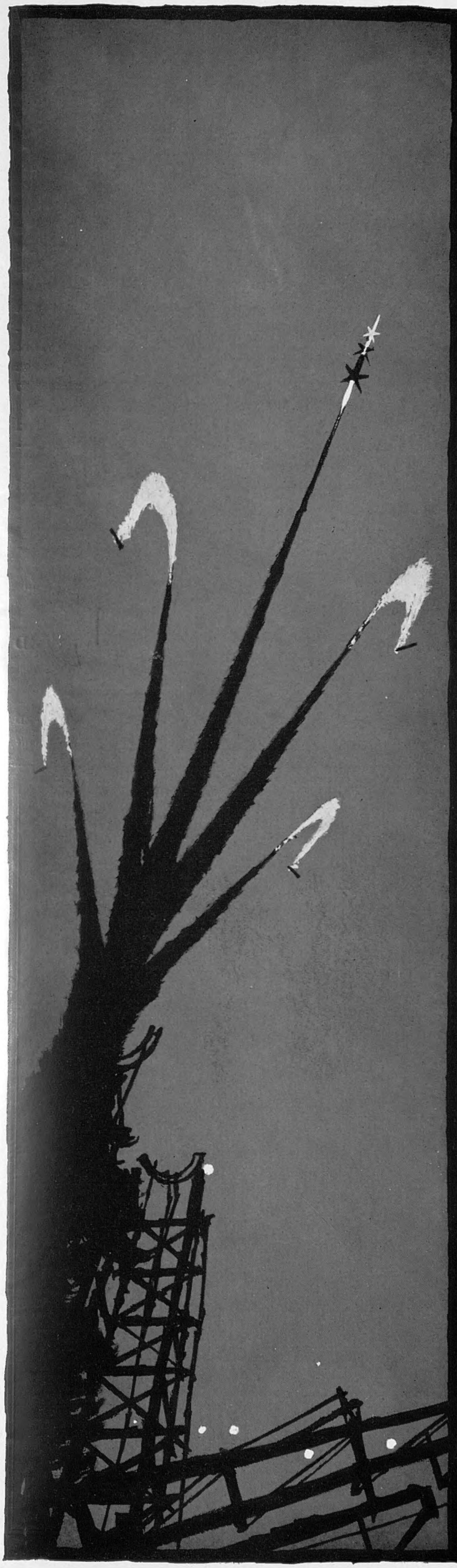


Flying to the moon? or walking?

R.T.B. WILL HELP TO GET YOU THERE

IF YOU'RE FLYING, you'll need a lot of electronic gear to steer your space ship on the right course—and electronic gear needs the "Alphasil" special electrical steel Richard Thomas & Baldwins make in their Cookley works in the Midlands. To keep pace with increasing demand Richard Thomas & Baldwins have built a new £3,000,000 plant to produce this steel—enough for many million laminates and stampings for the electrical equipment you're using every day—whether you're a potential man on the moon or not.

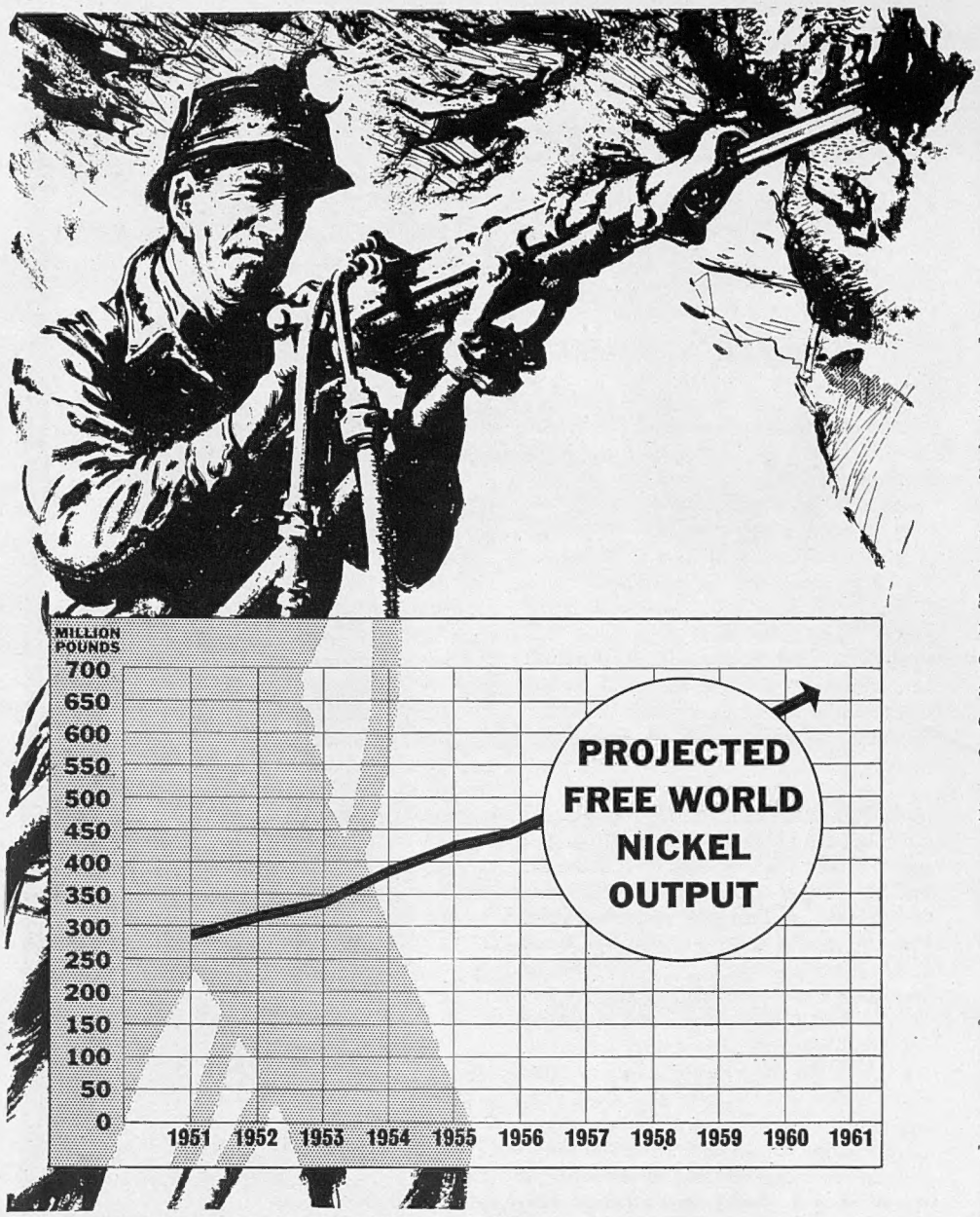
IF YOU'RE WALKING, can we recommend a shining steel stairway all the way to the moon? More than enough steel sheet for one has poured out of Richard Thomas & Baldwins' rolling mill at Ebbw Vale. But we should tell you there's a great demand for steel sheet, for every form of transport from children's cycles to airliners, for refrigerators and washing machines, just to start a very long list. And from the same steel is made the tinplate which, in products like food cans and bottle tops, is so very much a part of our everyday life. In fact, if you wanted to live comfortably on the moon most of the things you would choose to take with you would have some Richard Thomas & Baldwins' steel in them somewhere.

Whoever the first man on the moon may be, and how ever he gets there, Richard Thomas & Baldwins are ready to salute him. It will be a salute to a pioneer from an organization with a great pioneering tradition — for Richard Thomas & Baldwins have been responsible for almost every important development in British steel sheet and tinplate making in the past 50 years. And never were the twin traditions of pioneering and quality stronger among the firm's 25,000 workers in nearly 40 plants, than they are today.

RICHARD THOMAS & BALDWINS

A GREAT NAME IN STEEL SHEET AND TINPLATE

HEAD OFFICE: *47 Park Street, London, England*
IN CANADA: *Richard Thomas & Baldwins (Canada) Ltd., 3rd. Floor, 50 Wellington Street East, Toronto, Ontario.*



Nickel output up 50% in 5 years!

This was the 1951-56 achievement of *free world* nickel producers. And, further, from 290 million pounds in 1951, they aim at a figure of 650-675 million pounds in 1961. Their 1956 output of 450 million pounds is ample encouragement both to themselves and to industry.

In line with this increase, the Inco-Mond organisation, largest nickel producers in the world, have great plans for the future. At their new mines in Northern Manitoba construction work goes rapidly forward for the development of this big-tonnage nickel-producing area. In Sudbury, Ontario, they continue to expand capacity by installing new facilities, improving processes and utilising resources to best advantage. In 1961 Inco-Mond expect a nickel rate of output of 385 million pounds per year—one hundred million more than in 1956 !

Users are assured of more nickel in the future. The nickel industry plans to that end.

INCO INCO-MOND NICKEL MOND NICKEL

THE MOND NICKEL COMPANY LIMITED
THAMES HOUSE · MILLBANK · LONDON · S.W.1.
Affiliate of
THE INTERNATIONAL NICKEL COMPANY OF CANADA LIMITED

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FAST PASSENGER and CARGO VESSELS to 6,500 tons; HIGH SPEED LAUNCHES for COMMERCE and the SERVICES; PLEASURE CRAFT and OCEAN-GOING YACHTS

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A RANGE of CHASSIS for PAY LOADS of from 4 to 100 tons for COMMERCE, INDUSTRY and the SERVICES

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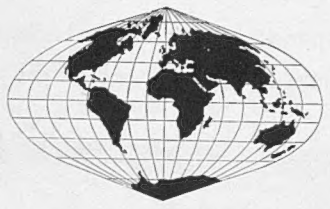
Are you planning development IN CANADA?

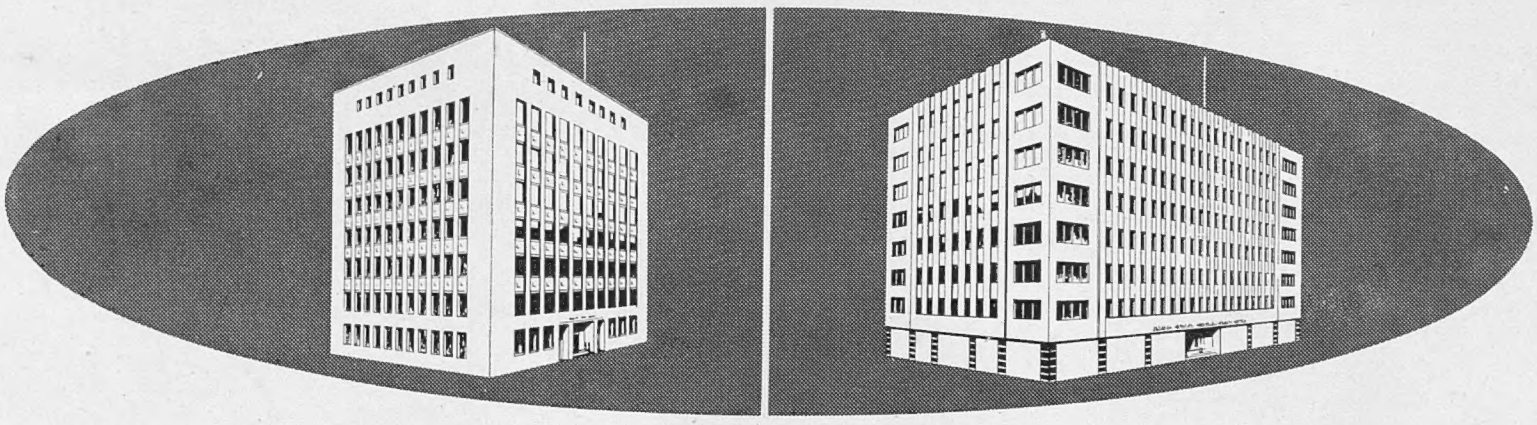
CUBITTS

can advise you



Local knowledge—world-wide experience

When you need new industrial or administrative buildings in Canada you will be sure of getting the best of both worlds through the Cubitt Group. Initial discussions can take place in Britain, while the actual contract is later carried out by Anglin-Norcross Corporation Limited—a member of the Group—established in Canada for 70 years. The advantages of having a company with a thorough knowledge of local conditions is obvious, whilst, coupled with them, are the world-wide resources and experience of the Cubitt Group.



Montreal Life Insurance head office building—this contract was completed by Anglin-Norcross in 10 months.

New building in Montreal for Canadian Overseas Telecommunications Corporation — completed in 12 months.

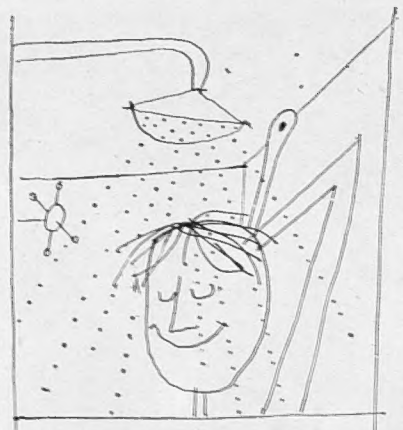
With the experience of the past

CUBITTS

build for the future

TGA C256

HOLLAND & HANNEN AND CUBITTS LIMITED · ONE QUEEN ANNE'S GATE · SW1 / GREAT BRITAIN · CANADA · NEW ZEALAND · WEST INDIES · MIDDLE EAST

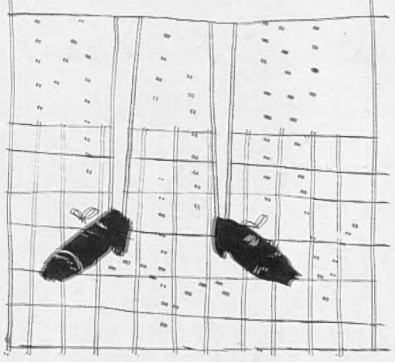


SAXONE IN CANADA

Saxone shoes first came to Canada over 40 years ago. They have stayed as good friends because of their excellent craftsmanship, styling and comfort. These Scottish-made shoes are built to last.

shoes you won't want to take off!

Today they appeal as much as ever to the sound judgement of Canadians who know a *good* thing when they see it.



SAXONE
OF SCOTLAND

Saxone shoes are available in Canada at the branches of the **T. Eaton & Co. Ltd., Woodward Stores Ltd., Lilley & Skinner (Canada) Limited.**

Raincoats With Great Associations

Made from the cloth used by Everest and Arctic Expeditions . . . . . also worn by Stirling Moss, Britain's leading racing motorist, and by Donald Campbell in his recent successful attack on the world's water speed record.

GRENFELL REGD

HAYTHORNTHWAITE & SONS LTD
LODGE MILL BURNLEY

Riches from the Untamed Mountains

This is the Rocky Mountain Rift, 500 miles North of Vancouver and a little way below the Yukon border. Difficult to reach overland, it has remained a closed book, an unexplored part of British Columbia. The only real access is from the air. Yet the bird's-eye view reveals it as a wild terrain of pine-clad slopes and melting snows, potential sources of raw materials and immense power.

Plans for developing this country are already in hand by the Wenner-Gren British Columbia Development Company. BTH are acting as electrical advisers to this company and are also carrying out the task of assessing hydro-power potential, on which pulp and paper mills, mining and mineral production, and transport would depend. The power area is 470 miles long, varies in width from 50-150 miles, and covers a total area of 50,000 square miles. Present plans envisage the possibility of the world's longest man-made lake, which may take seven years to fill, and a generating potential of some 4,000,000 horse-power. Experience gained by BTH in solving long distance transmission problems in Europe, Asia, Africa, Australia and New Zealand is being utilised to overcome many of the difficulties in advance.

To tame these mountains will call for hardships and high endeavour in one of the greatest pioneering jobs in modern history, and BTH are proud to be numbered among the pioneers.

RECENT BTH CONTRIBUTIONS TO CANADA'S DEVELOPMENT

Toronto's Modern Subway has 140 railcars fitted with BTH traction control equipment. In Canada's industries too BTH has an important part to play. A 25,000kW hydrogen-cooled turbo alternator provides power at the works of the Ford Motor Company of Canada.

For British Columbia Electric Co. Ltd., BTH has supplied 230,000 volt, 7,500 MVA lenticular circuit breakers for the Ingledow Substation.

A blast furnace blower for the Algoma Steel Corporation of Canada is the largest of its type. It can handle air up to a volume of 100,000 cubic feet per minute.

At Baiecomeau, P.Q., where the Canadian British Aluminium Company is building a large smelting plant, BTH is supplying two banks of mercury-arc rectifiers, transformers and switchgear, each bank to provide 100,000 amp. at 850 volts d.c. for the electric furnaces. The first of these has gone into operation in the record time of 22 months.

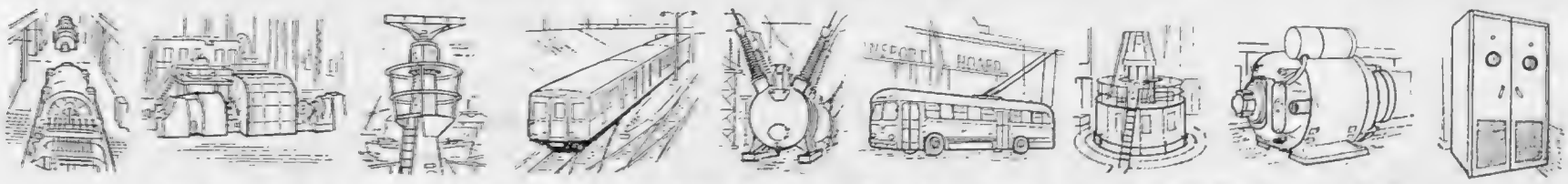
EXPERIENCE BACKED BY IMMENSE RESOURCES

The sphere of BTH activities covers every aspect of the generation, distribution, transformation, utilisation and control of electric power. From giant turbo-generators to fractional horse-power motors and tiny transistors, BTH products have been chosen for service in many parts of the world.

In Canada, BTH has its own well-established company which has local experience and a knowledge of the customer's problems and requirements. This Canadian experience is backed by the resources and researches of the parent company in Britain, whose growth and progressive outlook is typified by the vast new turbine factory recently opened in Co. Antrim, Northern Ireland. This plant was one of those visited by the Canadian Trade Mission during its recent tour of British Industry.

B T-H looks ahead with Canada

TURBO-GENERATORS · TRANSFORMERS · SWITCHGEAR · ELECTRIC DRIVES FOR INDUSTRY, AGRICULTURE AND MINING · FRACTIONAL HORSE-POWER MOTORS · ELECTRONIC CONTROLS · GAS TURBINES · ELECTRIC AND DIESEL-ELECTRIC LOCOMOTIVES · MARINE RADAR · AIRCRAFT ELECTRICAL INSTALLATIONS · SEMI-CONDUCTOR DEVICES



THE BRITISH THOMSON-HOUSTON CO (CANADA) LTD

TORONTO, ONTARIO: 766 KING STREET, WEST. MONTREAL, P.Q: 562 MONTEE DE LIESSE. VANCOUVER, B.C: 908 THE BURRARD BUILDING, 1030 WEST GEORGIA STREET

an A.E.I. Company

TGA A5210

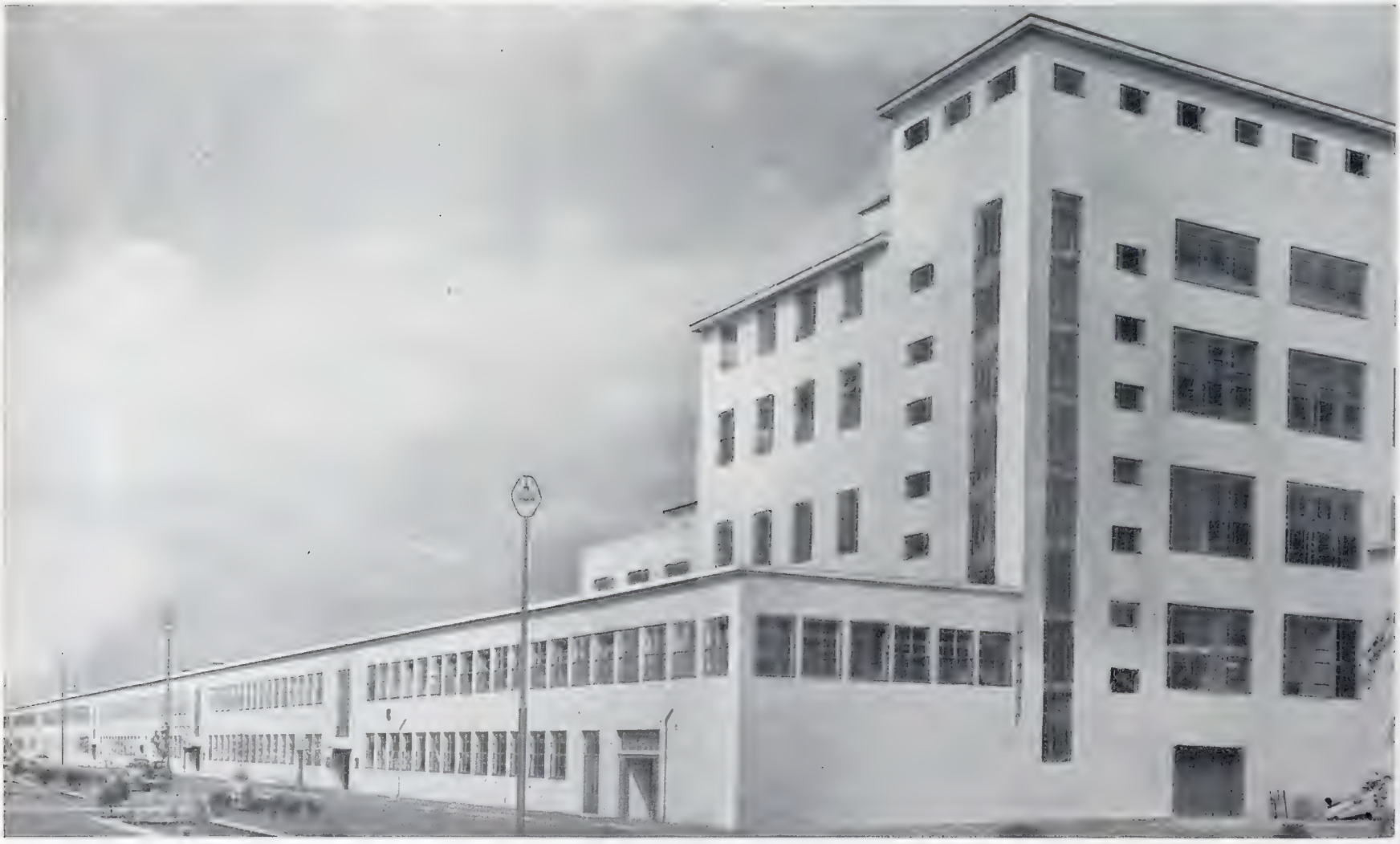
**

Tomorrow's *Nylon* planned today

Demand for British Nylon yarns increases every day of every month. To meet this greater demand with higher output, British Nylon Spinners have made plans for a major extension to their new Doncaster factory, costing between £3 and £4 million. The new building, fully equipped with spinning machinery, is scheduled for completion by January 1959.

Already the largest producers of nylon yarns in Europe, B.N.S. are going further and faster into the lead—while the research and development departments at Pontypool are planning nylon's new horizons.

The huge new B.N.S. factory at Doncaster went into production in 1955. Already, a major extension is planned.



nothing like *Nylon*

B Nylon S

BRITISH NYLON SPINNERS LTD., PONTYPOOL, MONMOUTHSHIRE

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Volume CCXXXII No. 3020

The SPHERE, London, February 15, 1958

The SPHERE

with which is incorporated THE GRAPHIC

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AN UNPRECEDENTED BLOW TO BRITISH SPORT—THE WRECKAGE OF THE ELIZABETHAN AIRLINER LIES IN THE SNOW AT MUNICH AIRPORT : The aircraft crashed on Thursday of last week after it had taken-off on its way to London from Belgrade. Among the twenty-one dead were seven members of the Manchester United football team, which had been playing for the European Cup in Belgrade, and seven British sports writers. Several other passengers were seriously injured.

The B.E.A. Elizabethan airliner *Lord Burghley* was on charter carrying a crew of six and thirty-eight passengers. It had picked up the Manchester team in Belgrade after their European Cup match with Red Star and had stopped to refuel at Munich. After two attempts to take-off in a snowstorm the captain was not satisfied with one of his engines and returned for consultations with the station engineer. When it was decided that the aircraft was satisfactory a third attempt was made, and on this the tragedy occurred. The plane appeared to overshoot the runway, hit a house and burst into flames. Seven of the Manchester United team were killed instantly, as were three officials of the club, seven sports writers, two other passengers and one member of the crew. Frank Swift, the ormer England goalkeeper, who was a guest of the team, died before reaching hospital. Among the very seriously injured was Matt Busby, the Manchester manager, but at the beginning of this week he was reported off the danger list. Two of the survivors remained on the danger list, their condition being stated to be worse. (Further pictures of the Munich disaster on page 252.)

Postage—Inland, 4d. ; Canada, 1½d. ; Elsewhere Abroad, 6½d.

A RARE LONDON SIGHT : The gates of the Marble Arch are thrown open as the King's Troop of the Royal Horse Artillery rides through to Hyde Park to fire a salute on the sixth anniversary of the Queen's accession to the Throne. Originally the Arch, which was modelled by George Nash after the Arch of Constantine in Rome, stood in front of Buckingham Palace. It was placed in its present position in 1851 when the Palace was enlarged.

A London Newsletter

195-198, STRAND, W.C.2.

Two Wasted Days.—The two-day debate on the " Leakage report " was a perfect example of the chief charges recently levelled in the Press at the House of Commons: that it wastes precious hours debating trivialities and that it often reveals in debate no more dignity and sense than does a nasty school debating society. All parties had accepted the findings. Two days were allotted to enable the Opposition to snipe at the City, throw some more mud and save face by rejecting apology. The debate was like war. Long periods of boredom, a great deal of fog, and brief bursts of fury and confusion, and as in war, very few of the participants were able to be at their best under fire. In this fine example of House of Commons debate, the chief charges against the House were quickly and fully proved. It contains far too many little men and little minds and wastes far too much time over irrelevance and triviality and cheap scores. The Socialists bore the lion's share in proving the rightness of Press criticism, and in the uproars very little was heard that even partially redeemed the low level of debate. To some of us, these two days, the circumstances that led to their allocation and the conduct of business, seemed to represent a " new low " in the standards of Parliamentary debate. All of which is not to suggest that in the chief centres of business in the world's financial capitals, all is perfect even if all is honest. Sir Lawrence Jones, in his latest book, has admitted his surprise at the amateur status of the bulk of City men, and the recent little boom due to America's sputnik success suggests that cold logic and a grasp of economic and financial realities do not always control the movements of prices.

American Explorer.—Round and round goes the American Explorer at 18,000 m.p.h. I forget how many of these little man-made satellites are now circling the earth on their lawful occasions and I couldn't care less. Two more are on the way and that suggests that space traffic lanes may soon be a subject for international agreement. But America has regained her lost face and I suppose her little sputnik may have an important effect on her political and economic policies. Those which she last released were clearly born of a deficiency complex and were absurdly expensive. They might now, with recovered face, be somewhat pruned. But the time-lag which gave Russia that kudos lost America the boon of nine days of publicity. For sputniks have very short news-story value and the public has long since regarded them as commonplace incidents in our scientific climb to the stars. For my part, I was always much more excited by seeing an Edwardian balloon, and most of us to-day still get more kick out of murder and football sensations. But the U.S. satellite is a neat and pretty little device, no doubt well worth the money, and its German-born designer and his team have earned the gratitude of America for this improved V.2 rocket which set Jupiter II on its course. We, too, deserve a little gratitude since we played the part of the guinea-pig when V.2 was being tried out at the end of World War II.

Liberty and Licence.—The eternal search for circulation, as we all know, requires constant new sensations, and the sensational is usually pandering to human frailty and unwholesome curiosity. Pornography a few decades ago was kept under the counter, where it sold well. After the wars, when we all became wiser than our fathers, such concealments were found to be stuffy Victorian conventions and the cry was for clearing out the cupboards and seeing things as they are, facing facts. And facing facts proved to be good box-office. As *The Times* said, we have travelled far since Trollope agreed to cut out the " warm " passages in the MS. of *Barchester Towers*. We have indeed! Following (as usual) the slick lead of America, we still pour out novels devoted to the love-affairs of homosexuals and the mental collapse of drunkards, and we found, as America did, that it paid to do so. The Stage, so far as it could, followed suit and the B.B.C. has found it necessary, in the name of respectable realism, to debate homosexuality, A.I., venereal disease, and so on, before family audiences. But there are still living parents and grandparents not altogether weaned from the " stuffy " conventions of their youth and they have found these things hard to bear. And not only they. Licence and reticence come and go as fashions down the ages. The ancient Greeks, the Romans, the Restoration dramatists, all ages had their pornographic periods, and prurience was often succeeded by prudery. For my part, I could never remember a dirty story two minutes after I heard it and that, I think, is proof that it bored me. And now young and old are beginning to discover that sex run mad, drunkenness and homosexuality, in novels and plays, are not lively themes unless adorned with wit and style, and that for recreation there is more fun to be got out of Trollope or W. W. Jacobs than from the *Hemlock and After* fashion in novels, and that the high comedy gems in a " bowdlerised " *Barchester Towers* or *The Duke's Children* come as a welcome relief to the dreary dinginess of vice. If one more reaction to " prudery " is due, it will be welcomed by many, but a new school of writers must be recruited to prove that there is fun to be got out of decency and reticence.

Not Only the Press.—Press intrusion has proved a wonderfully long and lively symposium in the columns of several newspapers and no doubt " good will come of it." For a time at least hunting the bereaved may come to be viewed as not less cruel than stag-hunting among a section. But not universally and not for long. We blame " certain sections of the Press " and, in certain instances, not unfairly; but, as I have said before, an

JUDGING AT CRUFT'S : Crowds at Olympia, in London, gathe country go on show. A pointer bitch, Champion Chimin Show attracted a total entry of 6,916 animals, making a clas

RATES OF SUBSCRIPTION TO " THE SPHERE "

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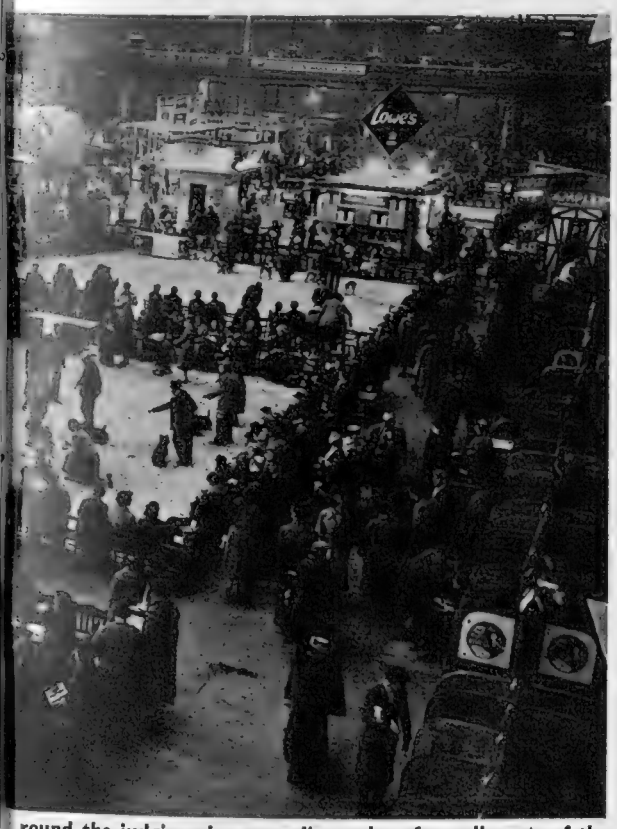
THE WORLD'S MOST UP-TO-DATE AIRCRAFT-CARRIER GETS UNDER WAY AGAIN FOR THE FIRST TIME IN ALMOST EIGHT YEARS: H.M.S. *Victorious* is seen leaving Portsmouth on her voyage to undergo trials at Spithead, off the Isle of Wight. The trials are scheduled to last for several months, during which time civilian technicians will check that all the new machinery and equipment is functioning properly. On completion of the trials she will join the Home Fleet. H.M.S. *Victorious* is the sixth modern aircraft-carrier to join the Fleet since the war and is the first to be fitted with all the British-developed aids to naval flying. Originally 22,600 tons, she is now 30,000 tons.

...our of fame is by no means despised even by people of ...good education. Nor is it only the Press which affords ...that boon. Self-advertisement is quite the thing, and even ...e B.B.C. cashes in on it, and week after week we listen to people of moderate ability or importance "frankly" revealing to a team of flatterers details of their childhood and adult careers and their opinions on this and that. How their fathers would have shuddered at such self-boosting! Indeed, the B.B.C., in its search for a now much-needed stimulus, seems to range even wider than the sensational Press in its search for subjects for self-boosting and carries it down to the village pump. Certainly it pays to advertise, whether you are a politician, an author, an actor, a débutante or a parish councillor. Unless you do, your death will be presumed. In these circumstances intrusion is unlikely to go out of fashion for long.



round the judging ring as pedigree dogs from all parts of the Bells, won the Supreme Championship. This year Cruft's Dog entry total of 13,085. This is a world record for any dog show.

Repairs on Two Floors.—A group of Socialist backbenchers under the sponsorship of Mr. Wedgwood Benn last week presented a private members' bill for reform of the Upper House which comes up for second reading on February 7, perhaps before the Life Peerages Bill is debated. The subject of Lords reform is always with us, and occasionally has a spasm of reawakened interest. This private bill reveals how very little chance there is of any measure of agreement on root-and-branch reform in our time. The bill would remove the right of peers to sit solely on the ground that they had inherited their peerages. Instead, it would provide that any person might be summoned to sit by Writ of Attendance without the need for ennobling him or his descendants. So far, so good. But the Bill seeks to increase further the powers of the Commons at the expense of the Lords over the enactment of certain Bills without consent of the Lords, and that seems to ensure its rejection in a Lower House possessing an adequate Conservative majority. The Bill might, of course, indicate the line of reform which a Socialist Government might take, if and when it had the will and the time at its disposal to deal with that question. Meanwhile, it is probable that the Opposition will put up no strenuous objection to the passage of the Life Peerages measure through the Commons. It looks as if the angry young backbenchers will bring about some reform of the Lower House long before anything serious is done to rationalise the Upper. Both are in need of reform, the Commons more urgently.

God's Own Country.—The wave of crime among juveniles and schoolchildren in Brooklyn and elsewhere in America—rapings, stabbings and murder even in junior high schools—may well be giving the authorities furiously to think and must one day jolt complacency to the point of looking closely into its causes. Such books and films as Mankiewicz's *Trial* or R. Lee's *I Passed for White* suggest to me that the colour problem may rank among the first causes with the horror films, "indifferent" parents, and uncensored television. Such revelations as these may also induce a number of more backward peoples (such as Britain) to challenge America's title to being God's favourite. Certainly, we may thank Heaven for our legal procedure if we believe only half of what we read of a criminal trial of a coloured defendant in the U.S.A. We can be thankful at least that it does not require two or three days of challenge and rejection to find "twelve good men and true" who may be relied on to find a verdict according to the evidence and not according to racial prejudice. We have our own problems of juvenile and adult crime waves and moral standards, and it may well be that to-day God has no favourite country among the nations; that in the present wave of indiscipline in the world, no first-class honours can be awarded in the school of culture and decency; but I very much doubt whether America, so rich, so smart and so free, can to-day qualify very high even among the second-class honours awarded by Heaven. She spends a vast amount of money on preserving her freedoms. Some of them are not worth a cent and would be better thrown on the midden.

"A Place of Rare Pleasure."—A secretary at the Soviet Embassy recently assured an audience in Durham that Siberia is a place of rare pleasure. They are building a branch of the Academy of Science there, and they would welcome tourists. What is perhaps true of Siberia is equally true of Dartmoor. It all depends on the capacity in which you visit the place. Summer tourists enjoy the peace and freedom of Dartmoor. Others who go there (or to Siberia) "know no such liberty" and must certainly envy the visitors who find no obstacles set to their terminating their stay at will when surfeited with the amenities offered. Perhaps it is hard on Siberia and Dartmoor that their names have unpleasant associations, which the tourist industry must try to break down. If you visit those places in the certainty that you can use the return half of your ticket, and at the right time of year, you will almost certainly return an enthusiastic agent of tourism. It all depends on the visitor's status, and that, perhaps, goes also for Southend or Blackpool in August, places of rare pleasure to many, but not to all.

News from Dartmoor.—The news that a prisoner recently released from Dartmoor carried out with him a jackdaw which he had hatched from the egg under his armpit, taking it away in a cage presented him by the Governor, is mildly interesting on two counts: I don't know what crime brought him to prison, but if it was some form of thieving, an old saw stands to be amended: "Set a thief to *h*atch a thief." More important, there is comfort and colour in this proof of humanity and understanding of the human problems in that grim fortress. We have heard of prisoners in medieval days keeping their sanity by making a pet of a mouse and it is pleasant to know that the tragedy of loneliness, boredom and frustration of creative urges is understood by many prison officials behind those inviolable walls on that lonely and melancholy Moor. I like to think that there is so much good in that discharged prisoner as will ensure his non-return, at any rate, while his fellow-prisoner survives. He can't take it in with him, he can take it out.

THE OLD STAGER

A RESCUE AMID SNOW AND FIRE: The tail section of the airliner lies near a shed and a trailer with smoke and flames rising around it at Munich airport. *On right*—A rescue operation is carried out above the nose of the Elizabethan in an attempt to reach a victim trapped inside. The only comparable disaster with the tragedy at Munich, in which seven Manchester United players were among the twenty-one dead, was the crash involving the Torino F.C., of Italy, nine years ago, when eighteen players lost their lives.

THE MUNICH AIR DISASTER

Wreckage of the Football Team's Plane

Below—

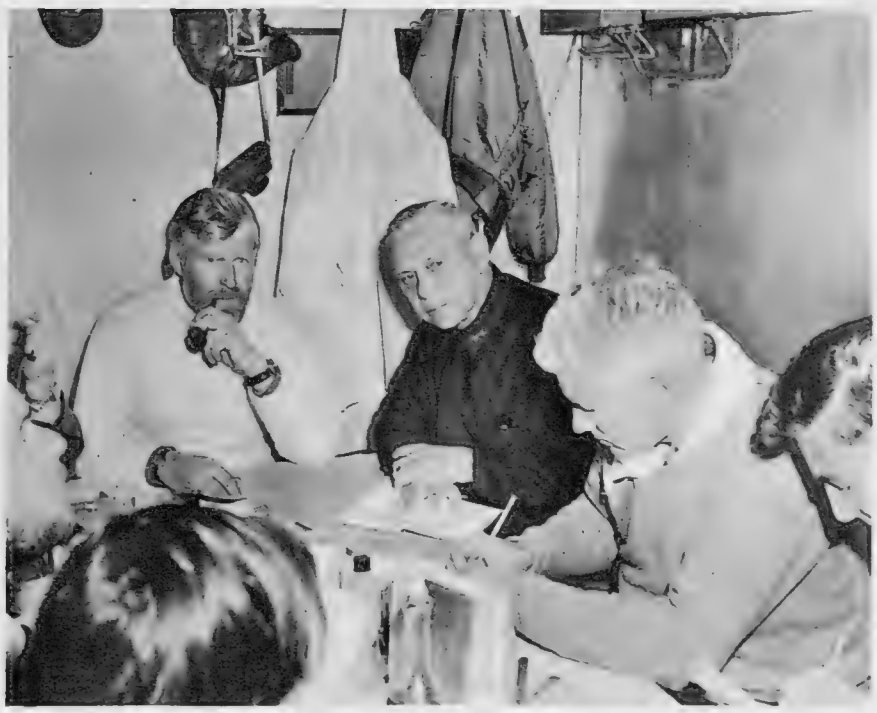
A MASS OF TWISTED WRECKAGE: The nose section of the airliner after the crash. When the aircraft overshot the runway the port wing hit a house, from which the occupants had a lucky escape.

AT THE SOUTH POLE

Pictures Received in London This Week of Dr. Vivian Fuchs on his Epic Journey

Sir Edmund Hillary has joined Dr. Vivian Fuchs, leader of the British section of the Commonwealth Trans-Antarctic Expedition, at Depot 700, and is now guiding the party on the last stage of the expedition's 2,100-mile journey across the continent. They are hoping to reach Scott Base, McMurdo Sound, in the first week of March. Sir Edmund had flown to Depot 700 from Scott Base after being delayed by bad weather conditions. Before his Beaver aircraft, piloted by Squadron-Leader John Claydon, touched down at the camp it took Sir Edmund on a short reconnaissance of the arduous line of crevasses which the expedition will encounter. The last two Sno-cats of Dr. Fuchs's party, held up a few miles from the depot for repair, arrived just before Sir Edmund. Depot 700 was established by the New Zealand party in December. It is the depot nearest the Pole on the route from Scott Base. Each depot has been located accurately by astronomical fixes and each has an indicating line comprising ten snow cairns 6 ft. high and surmounted by flags.

DR. FUCHS APPROACHES THE SOUTH POLE: Two of the four tracked Sno-cat vehicles which were used by Dr. Vivian Fuchs and the main party of the Trans-Antarctic Expedition plough their way through the snow and ice on the last stage of the journey from the Shackleton Base to the South Pole. He arrived there two weeks after Sir Edmund Hillary had reached the Pole from McMurdo Sound, on the other side of Antarctica. Hillary was the first man to make the land journey since Captain Scott.



GIVING THE NEWS OF HIS SAFE ARRIVAL: Dr. Vivian Fuchs (smoking pipe) talks with correspondents at the American base after his arrival at the Pole on his Trans-Antarctic crossing. He had reached earth's southernmost point from Shackleton Base.

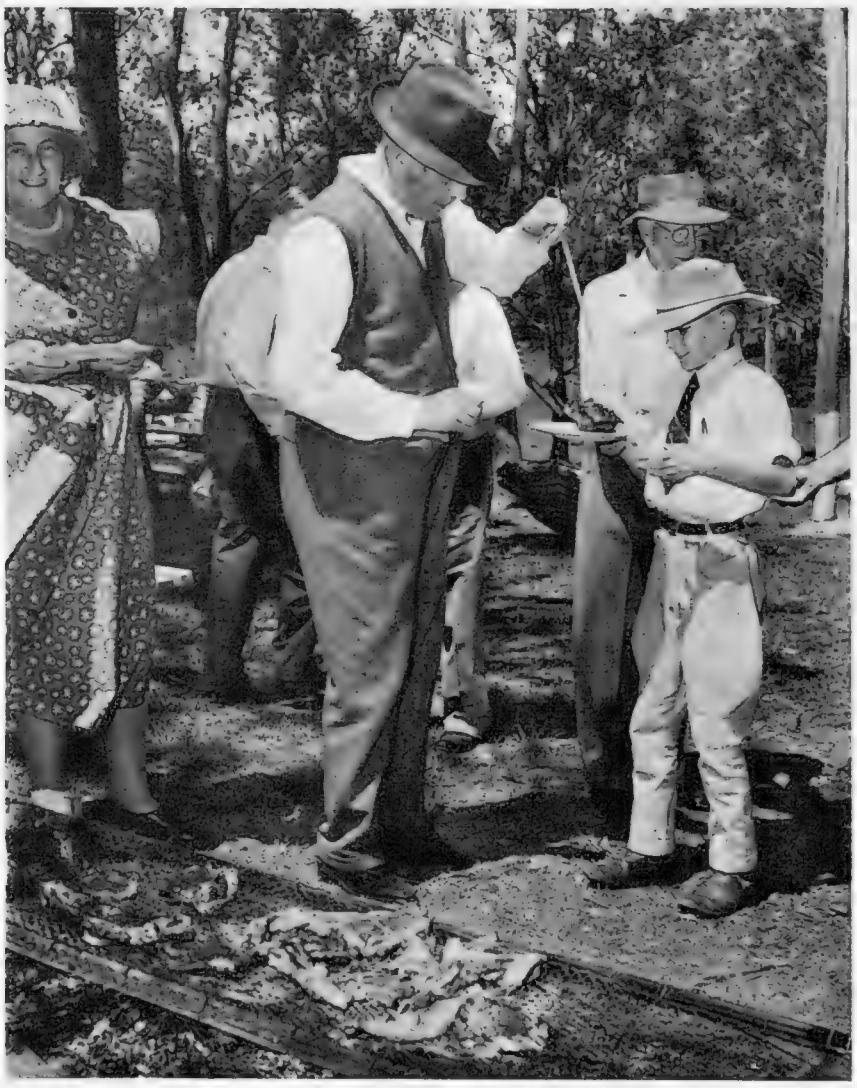
ANTARCTICA SCENES: A cross tops a statue of the Virgin Mary, erected at Hut Point, McMurdo Sound, a memorial to Captain Scott, who lost his life during the return journey of the South Pole expedition of 1911-12. *On right*—**A team of husky dogs which accompanied Dr. Fuchs curl up in the snow at the end of the journey.**

THE NEWS IN PICTURES

THE QUEEN MOTHER IN NEW ZEALAND: Her Majesty is seen with the Mayor of Auckland, Mr. K. N. Buttle, at the Mayoral reception held at the War Memorial Museum, one of the first functions of her very extensive two-week tour of New Zealand.

AN INFORMAL OCCASION: The Queen Mother is moving among some 2,000 guests of the Governor-General and Lady Cobham at a reception in the Government House Gardens. Her Majesty is due to arrive back in England by air on March 19.

ANOTHER STAGE OF THE QUEEN MOTHER'S COMMONWEALTH TOUR: An amateur photographer leans over a barrier to take a picture of Her Majesty as she walks with the Mayor of Auckland. In Auckland the Queen Mother met Queen Salote of Tonga.



THE PRIME MINISTER AT A BARBECUE: Mr. Macmillan, in shirt-sleeves, serves a barbecue steak to John Bridle at Banyak Suka, Queensland, during his Commonwealth tour. Afterwards he saw the mountain views along the Queensland coast.

A FORMAL OCCASION: In Canberra, the Federal capital of Australia, Mr. Macmillan is entertained at a dinner in the Federal Parliament House. Seated on his right is Sir Arthur Fadden, the Federal Treasurer. On his left is Mr. Menzies, the Australian Premier.

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THE NEWS IN PICTURES

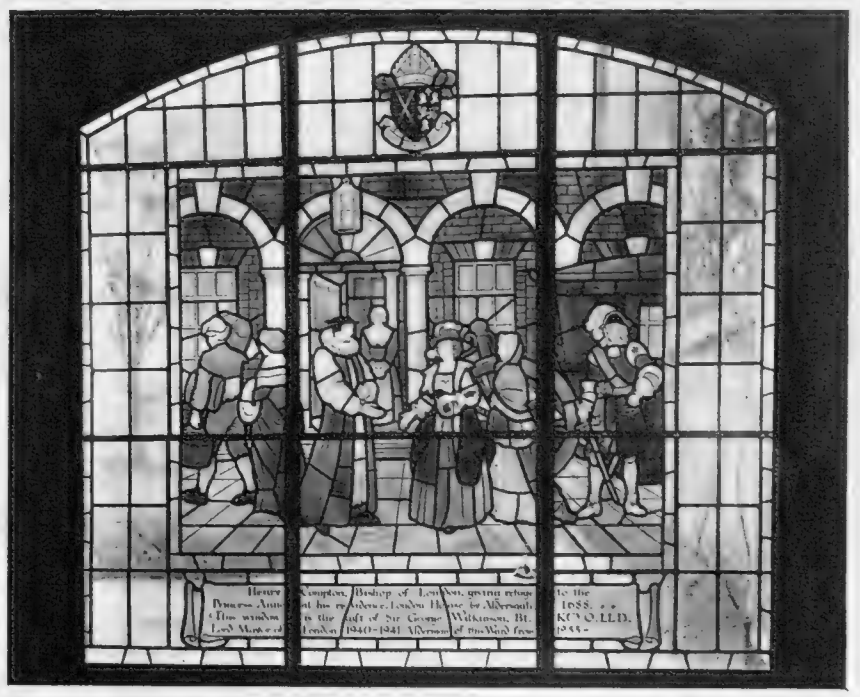
BRITAIN'S MOST FAMOUS RACING CAR FOR BRUSSELS: *En route* at Tilbury Docks for the Amsterdam Motor Show is the Railton Mobil Special in which the late John Cobb broke the World Land Speed Record on three occasions. Later it will appear in the British Industrial Pavilion at the Brussels International Exhibition. The car is twenty years old and first broke the record in 1938. The record speed of 394·196 m.p.h. which John Cobb achieved in Utah in U.S.A. in 1947 still stands after nearly eleven years.

AUSTRALIA'S MINISTER OF CIVIL AVIATION AT DE HAVILLAND'S: Senator S. D. Partridge (second from left), the Australian Minister of Civil Aviation, is shown the Rolls-Royce thrust reverser ready for fitting to the Comet III development aircraft, during his visit to the experimental department of the de Havilland Aircraft Company at Hatfield, Herts. With him are Mr. John Cunningham (extreme left), chief test pilot; Mr. A. F. Burke, managing director; and Mr. C. T. Wilkins, chief designer (extreme right).

FORTH FERRY GOES AGROUND: Near the famous Scottish railway bridge the Forth car ferry, *Sir William Wallace*, lies stranded only a few yards from the Hawes Pier, South Queensferry. Owners of the forty cars aboard had to wait five hours before their vehicles were landed. When the boat went aground passengers were rowed ashore. Many went on to Edinburgh by bus, but a few waited at a hotel nearby until the ferry was refloated and brought in. A road bridge has been projected here for many years.

A NEW BISHOP SEEKS ADMITTANCE: The Bishop of Swansea and Brecon, the Rt. Rev. J. J. A. Thomas, knocks on the north-west door of Brecon Cathedral with the tip of his pastoral staff in order to gain entry for his induction, installation and enthronement in the bishopric. Within he was awaited by the Dean, the Very Rev. William Edward Jones, and eighty-two representatives of the clergy of this Welsh diocese. The Bishop was consecrated at St. Woolos Cathedral, Newport, Mon., last month, in a Welsh and English-speaking service.

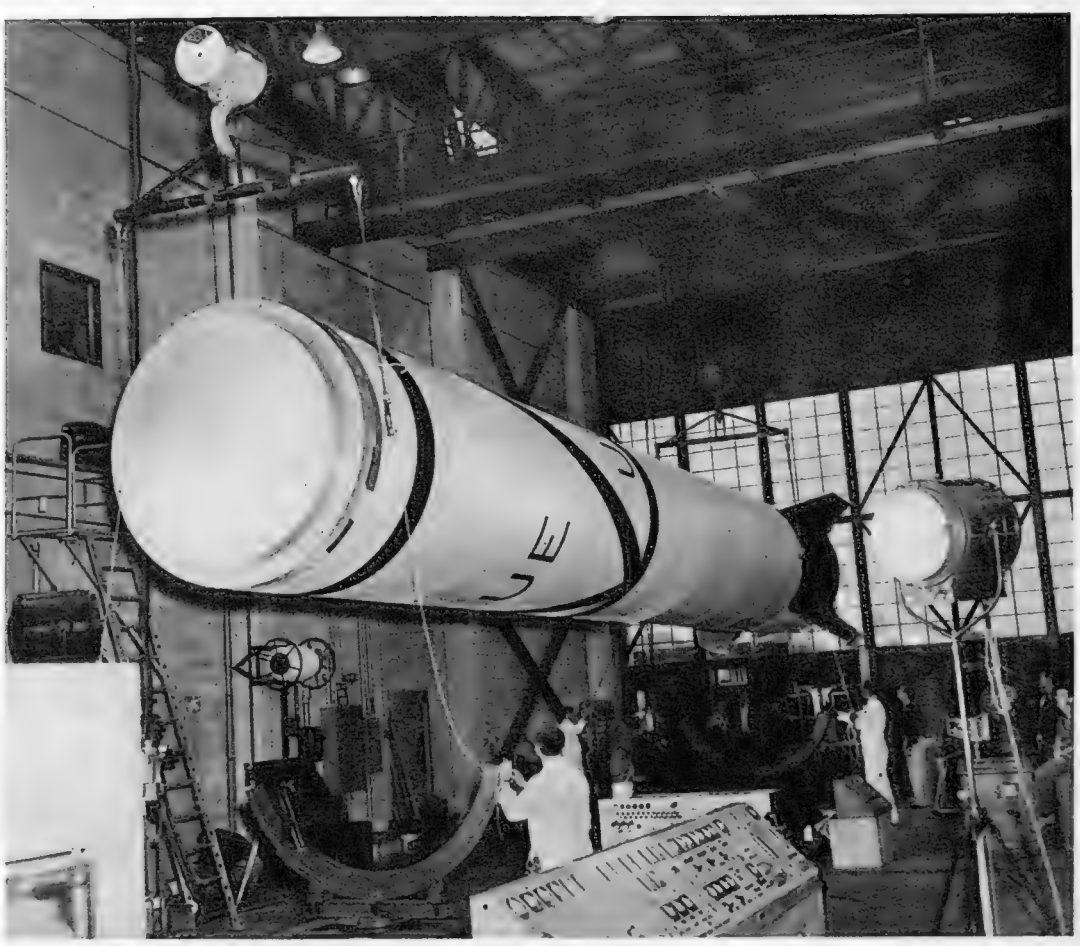
BUILDING SLEDGES FOR THE ANTARCTIC EXPEDITION: A workshop in a back street of Great Yarmouth, Norfolk, is the scene of the construction of sledges for the current Commonwealth Antarctic Expedition. Assembling a sledge in the picture are Mr. George Sheldrake (left) and Mr. Horace Sayers. On right of the picture Mr. Albert Griffith works on a water ski, one of the other products of the shop. Sledges and skis made by this tiny East Anglian firm are exported to countries all over the western world.

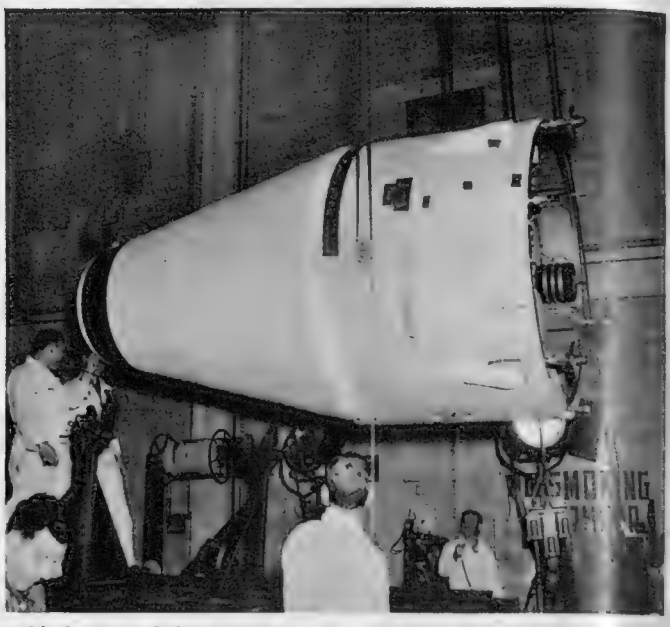


NEW STAINED-GLASS WINDOWS: This is one of a pair of stained-glass windows which were dedicated last week by the Bishop of London, Dr. Montgomery Campbell, at the church of St. Botolph-without-Aldersgate, in the City. They were designed by Mr. M. C. Farrar Bell. The picture of the window reproduced above depicts Princess Anne (later to be Queen Anne) being given refuge in 1688 by Henry Compton, Bishop of London, at his residence in Aldersgate. This event took place during the troubled times when James II fled the country. The window was presented by Sir George Wilkinson, Bt. The other is given in memory of George Vine (a Churchwarden) by his three sons, and shows John Wesley, accompanied by his brother Charles, preaching in Moorfields in 1738, with a background showing a view of the City. John Wesley's conversion to Evangelicanism occurred at a house in Aldersgate in the same year.

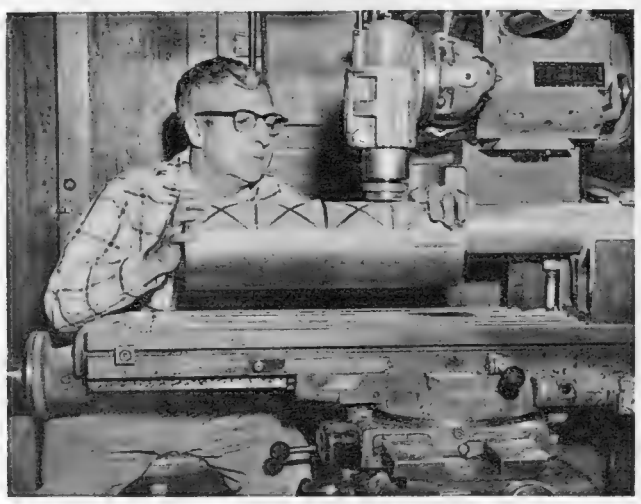
PREPARATION OF THE EXPLORER

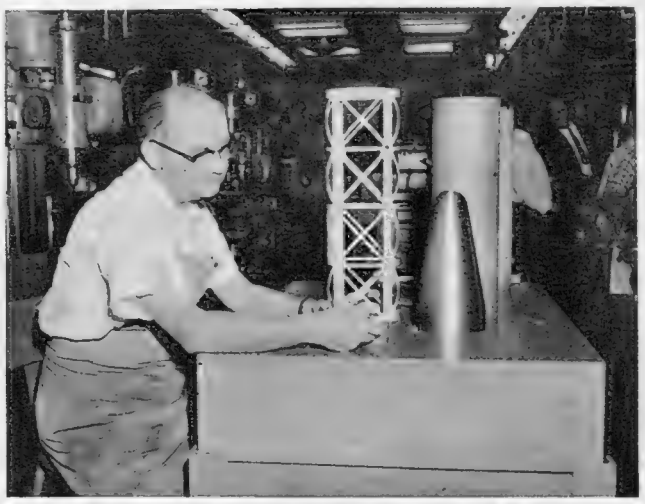
Behind the Scenes in the Assembly of America's First Successful Satellite





PREPARING THE JUPITER : The main stage booster of the Jupiter-C rocket is made ready for checking in the assembly hangar of the U.S. Army Ballistic Missile Agency's laboratory at Cape Canaveral, Florida. This portion of the rocket fell away when its fuel was exhausted. *On right*—The modified nose section of the rocket is removed from its transporter. Great care must be taken with it.





PRECISION WORKERS : *On extreme left*—A fibreglass lattice sleeve to hold instruments within the satellite is carefully machined in the Jet Propulsion Laboratory. *Centre*—The sleeve is inspected by a technician. *On right*—The finished sleeve with its delicate instruments within is prepared for a "shake test."

THE FINAL ASSEMBLY : Positioned on a "balancing tub" in the spin test rig, the satellite is inspected by a technician of the Jet Propulsion Laboratory. The satellite is stabilised by its spin like a rifle bullet.

On January 31 the first American earth satellite was launched at Cape Canaveral, Florida. Mounted on a Jupiter-C rocket, the Explorer satellite ascended into its orbit and began circling the world at 18,000 miles per hour. It had succeeded where the satellite carried by the naval Vanguard rocket had failed. Originally it had been agreed that the Army Jupiter-C rocket would be used as a second means of launching a U.S. satellite and that the first attempt was to be made by the Vanguard.

At the beginning of December the first launching of the Vanguard satellite failed when the rocket blew up at the moment of firing. Last month a second attempt ended less spectacularly when it was found that mechanical faults had developed through the clogging of valves with liquid oxygen fuel. Bad weather caused the fuel to be left for prolonged periods in the tanks, resulting in damage. When the second postponement was made, the Army team was told to go ahead with an attempt to get their satellite into orbit using the Jupiter rocket.

There are considerable differences in the two satellites. Whereas the naval device is spherical and about 6½ ins. in diameter, with a weight of 3½ lb., the Explorer is much larger and bullet-shaped. Neither is as large as the smaller of the two Russian satellites, Sputnik I, launched on October 4, 1957. The Explorer weighs 30 lb. and is 80 ins. long, 6 ins. in diameter. Sputnik I weighed 184 lb. and was spherical in shape, being 22·8 ins. in diameter. Sputnik II, which continues to circle the earth, is conical, weighs 1,120 lb., and is 19 ft. long and 4 ft. in diameter. Besides scientific instruments it carries the body of a dog, which is believed to have remained alive at least ten days after the launching.

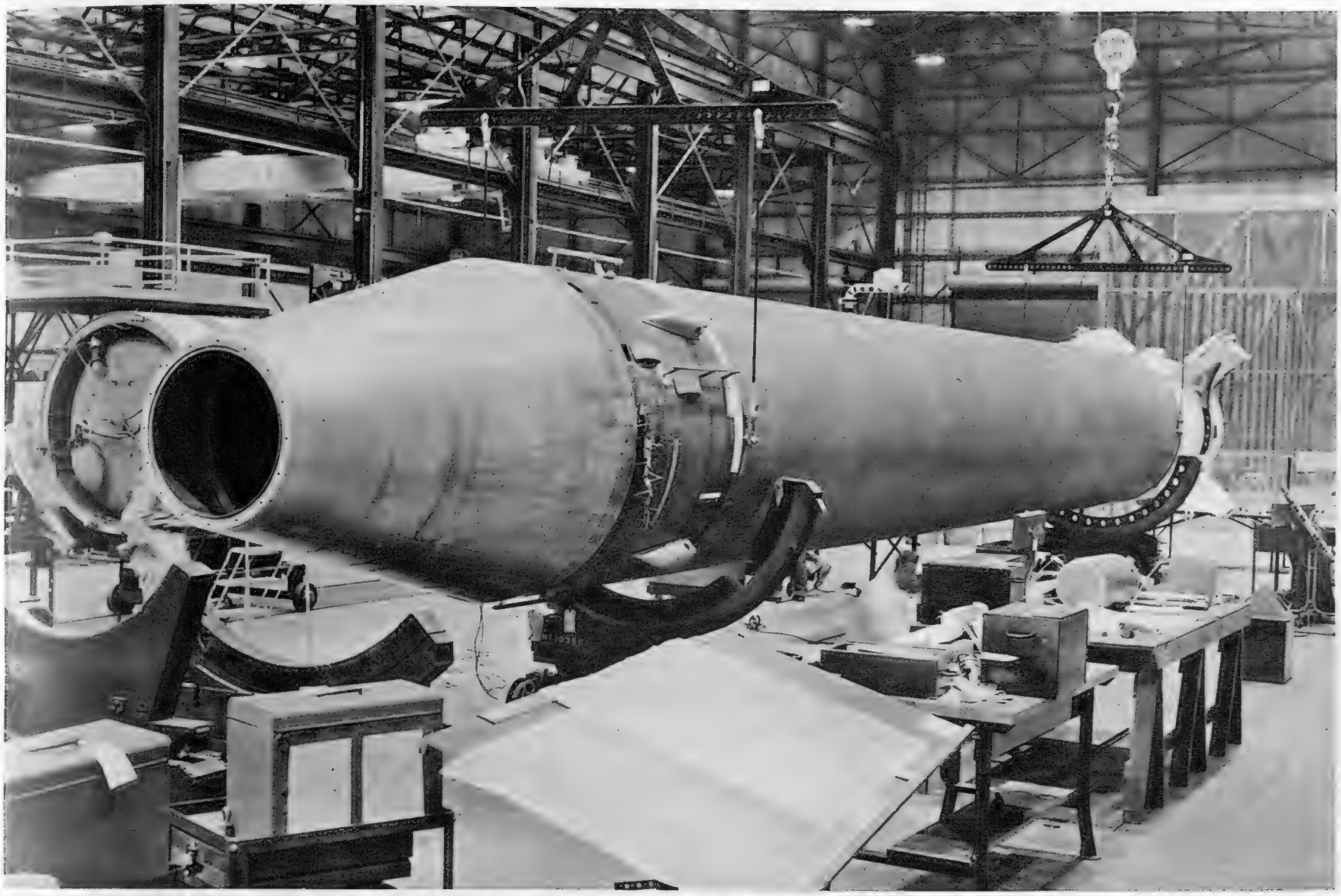
The Jupiter rocket was developed jointly by the Army Ballistic Missile Agency, Huntsville, Alabama, commanded by Major-General J. B. Medaris, and the Jet Propulsion Laboratory of the California Institute of Technology, whose director is William H. Pickering. Leading the team of scientists on the satellite project was Dr. Wernher von Braun, who worked on the German V2 rocket during the war. ABMA is responsible for the first stage of the Jupiter-C, which is powered by the well-tried Redstone Ballistic Missile engine, and is a liquid propellent power plant. The upper stages are furnished by JPL and fuelled by solid propellents.

The entire rocket is some 70 ft. in length. The fourth stage, together with the satellite, is 80 ins. long and has been designed to remain in connection while in orbit. There is, of course, no possibility of recovery, but it may well be that this satellite will continue to circle the earth for several years.

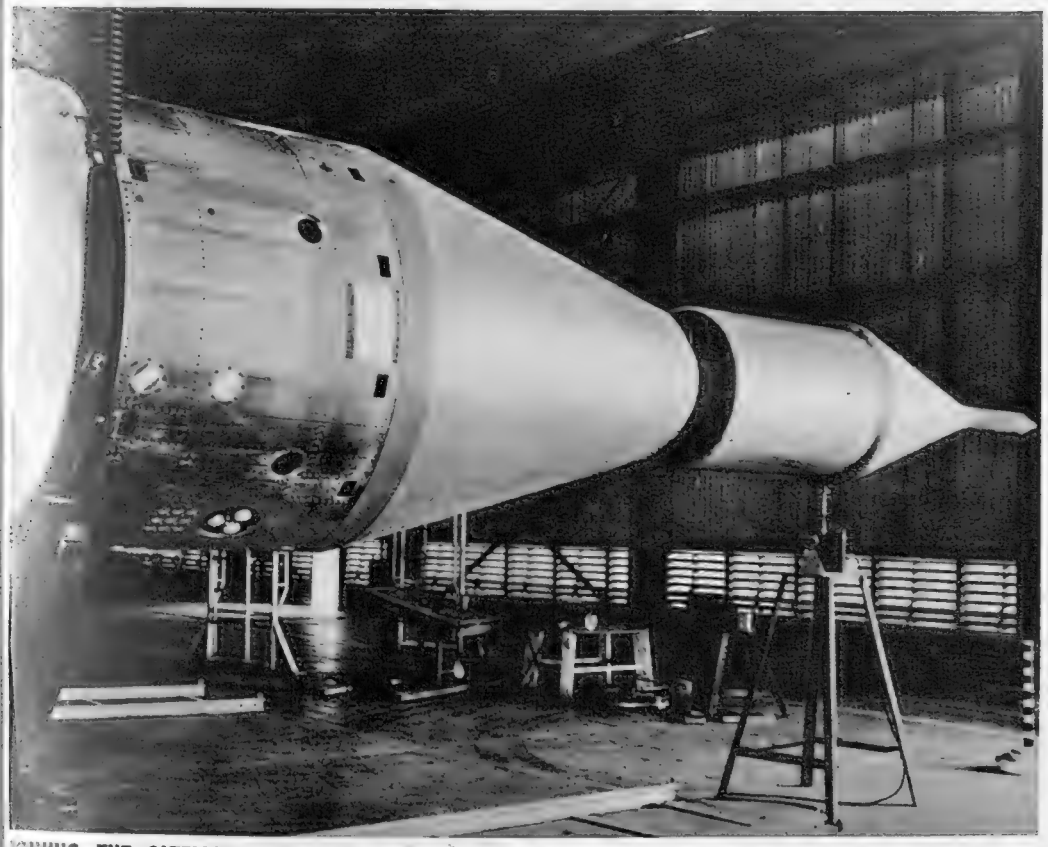
Four types of information are transmitted by the Explorer. These are skin temperature, that is to say, the temperature of the surface of the projectile; the temperature within the satellite; the erosion of cosmic dust; and valuable data on the effect of cosmic rays. Two transmitters continuously transmit this information. Both of them are much weaker than the one-watt transmitters used in the sputniks, but, as a consequence, they will be able to broadcast their information for a longer time, since the drain on batteries is less.

The more powerful transmitter has a strength of six-hundredths of a watt, and should operate for three weeks after the launching. The second transmitter is considerably weaker, having a strength of one-hundredth of a watt. This one is expected to last for a period of two to three months.

The Redstone rocket engine which lifted the Explorer satellite off the ground exerted a 75,000-lb. thrust on the missile which had a total weight o



JOINING NOSE TO MAIN ROCKET: The main stage booster and the nose section of the Jupiter-C rocket are joined in the Army Ballistic Missile Agency shops at Cape Canaveral. When the high-speed upper stages are added the rocket will be some 70 ft. long. Power for the main stage comes from a Redstone rocket engine.



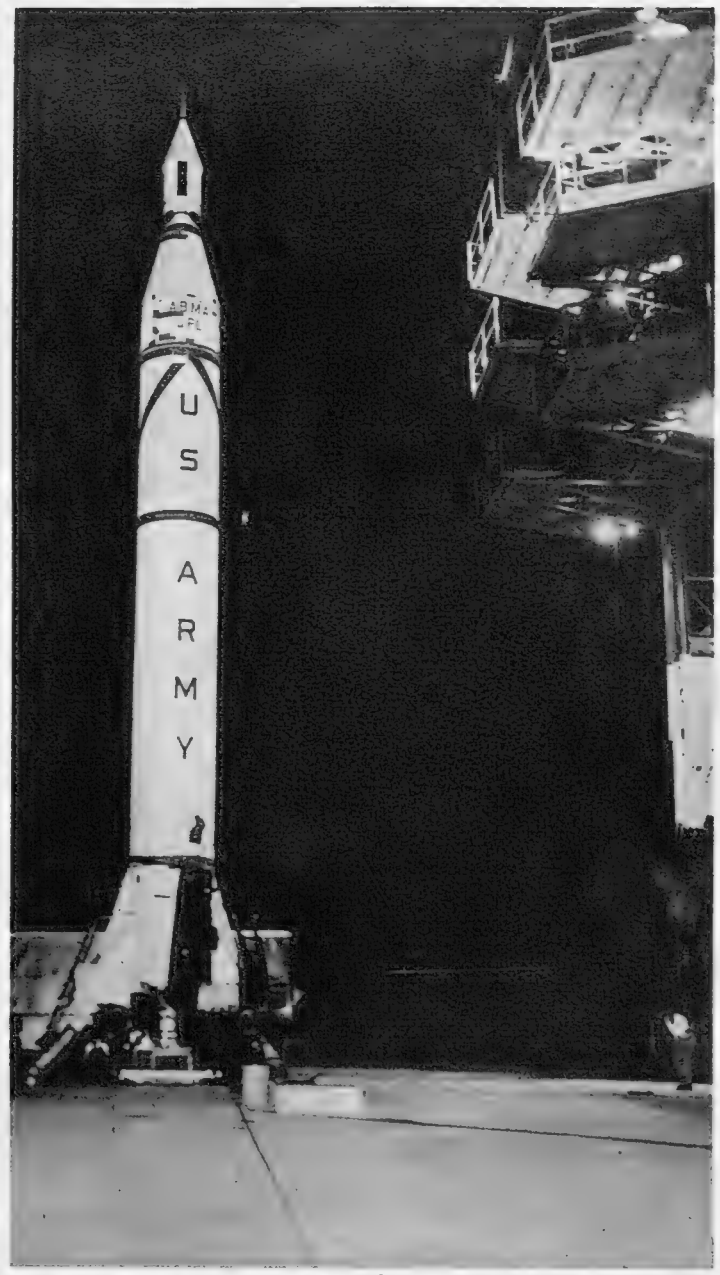
JOINING THE SATELLITE: The high-speed assembly of the earth satellite vehicle is joined to the nose of the main stage rocket in the engineering shop at ABMA. This rocket has been used for a re-entry test. A Jupiter nose cone after its journey into space was recently exhibited to the nation by President Eisenhower.

about 65,000 lb. A new type of fuel, known as hidyne, was used instead of alcohol, the normal Redstone fuel. The first stage was discarded at a height of 53 miles, 145 seconds after the launching took place. The three other stages, consisting of clusters of small solid-propellent rockets, coasted on up to an altitude of about 212 miles.

As they coasted up these final three stages they gradually formed an arc until they were aimed parallel with the earth's surface. At this point, some 405 seconds after the take-off, a remote control button was pushed on the ground, firing the three stages in rapid succession and accelerating the satellite to the orbital speed of 18,000 miles an hour. The Explorer then went racing off into space, whirling rapidly at a rate of about 700 revolutions per minute.

Three or four of the satellite's twelve exterior erosion gauges appear to have been broken during the take-off, but the cause of this occurrence is a matter of speculation.

Observing the spirit of the International Geophysical Year, the United States has disclosed the key to the coded messages which the satellite is sending out. It will be possible for observers in Russia to interpret the information which is being broadcast from the Explorer while it circles the earth.



THE FINAL PHASE BEFORE LAUNCHING: The Jupiter-C rocket stands ready for firing on the launching pad at Cape Canaveral. The satellite can be seen on the nose tip. On the right is the servicing gantry tower.

THE "FORMIDABLE CLUSTER" OF CAMBRIDGE CHURCHES: This view of the ancient university city from the tower of the Pitt Press shows some of its many churches. Those which have been numbered are the six near the centre of the city which have been declared redundant by a committee examining the provision of public worship. They are (1) St. Peter's; (2) St. Clement's (hidden); (3) St. Michael's (hidden); (4) St. Botolph's; (5) All Saints'; and (6) Great St. Andrew's. Also visible right of (2) is the tower of the Chapel of St. John's College; right of (3) Great St. Mary's, the University church; and between (3) and (4) St. Edward's and the Saxon tower of St. Bene't's. The college behind St. Botolph's in the foreground is Corpus Christi. The committee, which has been set up by the Bishop of Ely, has pointed out that there are far too many churches within a short distance of each other in the heart of the city, and too few on the outskirts. They recommend that the redundant churches be amalgamated with other parishes; for instance, St. Botolph's would go to Little St. Mary's on the opposite side of Trumpington Street. The buildings would not be destroyed, for in some cases they are of historic importance, but would be put to other uses. There has been a considerable amount of criticism of the recommendations.

TOO MANY CHURCHES IN CAMBRIDGE?

The City's Problem of a Surplus of Churches

SUBJECTS OF INQUIRY: Two of the "redundant" churches are Great St. Andrew's (*above*) at Christ's Corner and St. Clement's (*upper right*) in Bridge Street. There is opposition to their threatened closure.

AN ANCIENT CHURCH'S LIFE IS THREATENED: The little church of St. Peter on Castle Hill stands near a large site for proposed housing development. However, its future is the subject of keen controversy after the recommendation that it be closed.

A VICTORIAN SPIRE: All Saints' in Jesus Lane is another "redundant" church. On the left are the gates of Jesus College. The red brick building on the extreme right is Westcott House. The former All Saints' Church stood on a site near Trinity College.

SAILING IN DISTANT WATERS

Yacht Racing off Miami and Sydney ; and an American "Marathon" on the Ocean

On the waters off the coasts of the southern parts of the United States and of New South Wales, yachtsmen usually enjoy good conditions in the early months of the year. Contests of various kinds give enthusiasts ample opportunities for engaging in their sport. For instance, off Florida there is the Lipton Cup over a 25-mile course of triangular shape. Away to the west, San Diego, in California, is the starting point for a Marathon on the sea—the long-distance race to Acapulco, in Mexico. The distance is 1,500 miles and the thirty-six craft which entered this year were expected to take about ten days to complete the course.

National Day in Australia commemorates the first settlers who landed in January 1788 at Sydney Cove. The occasion is a nation-wide holiday and nowhere is it celebrated with keener zest than in the great city which has arisen in the area where those settlers stepped ashore 170 years ago. The Royal Sydney Anniversary Regatta is a traditional part of the day. This year, as is customary, the deep blue waters of Sydney Harbour were alive with yachts and other craft. The Regatta has been a feature of Australia Day for 122 years and can justifiably claim to be one of the oldest aquatic events which is nowadays held anywhere in the world.

On left—

A DUEL BETWEEN LEADERS: *Tavana* (on left), a 32-ft. yawl from Key Largo, Florida, and *Meteor II*, a 23-ft. cutter from Rochester, New York, have a close contest for the lead during the annual race for the Lipton Cup off Miami Beach, Florida. Twenty-eight vessels entered for the race, held over a triangular course of 25 miles.

THE START OF A 1,500-MILE YACHT RACE: Against a background of the coast of San Diego, California, yachts move before a light wind to the starting-point of the race from San Diego to Acapulco, in Mexico, 1,500 miles away. There were thirty-six entries.

THE ROYAL SYDNEY ANNIVERSARY REGATTA: Sails fill out in the famous harbour of New South Wales as the yachts race in the regatta which takes place there every year on Australia Day, at the end of January. The Regatta has been held for 122 years.

The Sphere of Travel

HOLIDAYS IN EUROPE—2

Suggestions for Holidays in France, Spain, Portugal, Tangier, Italy, Austria, Yugoslavia and Greece

By GORDON COOPER

HAVING dealt in my last article (February 1) with holiday suggestions in Northern Europe, I now turn to the Mediterranean lands, with their lure of hot sunshine and colourful background—the latter can often, alas, include noise, so don't forget to carry with you a pair of ear-plugs, otherwise you may well have sleepless nights. However, in most of the places I propose to mention you should not be troubled with overmuch irritating din.

FRANCE.—Here I take you to Finistère, the western portion of Brittany, whose coastline faces on to the Atlantic, and where the climate is generally warmer than on that portion of the province which lies on the English Channel. It is also generally, I think, a more interesting and more typical countryside, with its curious traditional women's dresses, its calvaries, and its Pardons. Here, too, are the megalithic monuments at Carnac and elsewhere, dating from prehistoric times. For those who wish to explore this territory, Quimper, a delightful city, is a recommended centre, and it is easily reached from the port of Saint-Malo. While for those seeking a seaside resort, my recommendations would be Locquirec, Primel-Trégastel, Carantec and Roscoff on the northern coast, and Morgat, Tréboul, Bénodet, Beg-Meil, Concarneau and Port-Manech—all along the western shore. The islands off the coast might also be considered, including the Ile de Batz (not far from Roscoff) and Ushant, connected by regular steamer service with Brest, although conditions there will mainly appeal to the escapist who is satisfied with modest accommodation and lots of fresh air. For an informative description of Ushant and for Brittany generally, Ethel Mannin's recently published book, *The Country and the Sea* (Jarrolds), can be recommended.

SPAIN.—Galicia has a certain Celtic resemblance to Brittany, for it also has a rugged coastline and its people still maintain curious customs. Nor is it difficult to reach, if you travel out by sea to Vigo. The most attractive portion of the coast is that offered by the fjord-like *rias*. Pontevedra, where there is a pleasant *parador*, is a good base for exploring the countryside, while the fine hotel at La Toja should satisfy most tastes. It has its own swimming-pool, for sea bathing is not always warm enough, even in mid-summer. Corunna is another possible choice, while for those who wish to get away from the beaten track I can recommend Playa America and Bayona, both with good beaches and simple accommodation; they are linked to Vigo by electric tram service. I should point out, however, that Galicia is the wettest part of Spain, so you want to go there prepared for showers.

PORTUGAL.—For those with a car—although public transportation is also feasible—the Alto Alentejo province, lying between Lisbon and the Spanish frontier, has much to offer the enterprising traveller, for it is both picturesque and has considerable historic and artistic interest. From the capital to Evora is about 100 miles by road, and within reasonable reach of this important Roman town are Estremoz, Vila Vicosa and Elvas. Strangely enough, although Evora is a town of considerable size, it does not possess an hotel—only pensions—so it is best, perhaps, to arrange to lodge in Elvas which possesses both an excellent *Pousada* (State inn) and good hotels.

Despite George Borrow's criticisms, Evora, former capital of Lusitania, is unquestionably the most fascinating city in Portugal. The centre of interest is the Acropolis-like hill upon which the twelfth-century Cathedral stands; it contains many treasures, including a great cross encrusted with no fewer than 1,426 precious stones. Nearby is the lovely stark ruin of the exquisitely proportioned Roman Temple of Diana (second century), not unlike the *maison carrée* in Nîmes. There are other interesting buildings and churches, among the latter being one dedicated to San Francisco, with its macabre *casa dos ossos*, the walls of which are tastefully decorated with human skulls and bones, while a delightful motto above the entrance reads: "We who are inside are waiting for you."

North-east of Evora is Estromoz, a town built largely of marble and encircled by seventeenth-century fortifications. The medieval keep is one of the finest in Portugal, and from it there is a marvellous view over the countryside, which is park-like and extremely attractive in the spring when the lavender, broom and cistus are in flower. Then, about eight miles distant, there is Vila Viçosa, with its sixteenth-century Palace of the Dukes of Braganza, the interior of which has a remarkably human atmosphere. Here King Carlos and his elder son spent the last night before their assassination in Lisbon in 1908, and nothing much has been changed since their departure. With its yellowing photographs of pre-1914 royalty, it provides a fascinating glimpse back into the vanishing afterglow of European monarchy.

TANGIER.—This historic city, where East and West have established a common, and a happy way of life, is now wholly embraced by the Kingdom of Morocco, but it still keeps its former tax-free privileges. As a centre for a sunshine holiday, it is a wonderful place, and the bathing is excellent. The old quarter—in the shadow of the Kasbah—is very intriguing, with its Moors, Arabs and desert Berbers, while in the modern city there are elegant shops and fine hotels. It is a good centre, too, for interesting excursions: to Gibraltar and into Andalusian Spain; to Tetuan and Xauen in what used to be the Spanish Zone; and even to those legendary cities of Rabat and Fez. Communications are good, and as pesetas are the currency the cost of a stay there is reasonable. You need a visa, however. Although as a travel writer I am accustomed to take my own holiday at home, yet for a change and a rest Tangier would probably be my own choice. Moreover, by B.E.A. to Gibraltar, it is so easily accessible.

ITALY.—Now that there is a direct air service between the U.K. and Pisa, the nearby glorious seaside resorts with their unexcelled beaches can be easily reached. Some travel agents are also running charter flights to some of the resorts. There is also the added attraction that some of the great art cities of Tuscany, such as Pisa, Lucca and Florence, are within comfortable excursion reach. The hinterland, too, is attractive. Viareggio, with its gay night-clubs, cafés, fashionable shops and splendid hotels, is the largest of the resorts, but you can hardly go wrong by going to any of the string of places along the many miles

MORE SUMMER CRUISES

TWO Dutch steamship lines whose ships are normally engaged on the Indonesian run have decided to go into the cruise business this summer. Royal Rotterdam Lloyd have announced two cruises to Bermuda, New York and the Azores by the 21,300-ton motor-ship *Willem Ruys*. The first starts from Southampton on May 24 and finishes there on June 13 and the second departure is arranged for June 15. Although this will be a one-class ship and first-class at that, the fares are most reasonable for such a lengthy three-week cruise. They range from £140 in a three- or four-berth cabin to £320 in a double cabin-de-luxe with a private verandah. All cabins are outside with either a window or porthole and quite a proportion are air-conditioned. The decks, as would be usual with ships on the Far Eastern run, are broad and spacious. The open-air swimming-pool should be a great attraction. Three whole days are spent in New York with two days in Bermuda and two in the Azores.

The Nederland Royal Mail Line are sending the 20,000-ton motor-ship *Oranje* on four cruises from Southampton this summer on June 28, July 13, August 2 and August 17. Palma, Genoa, Ceuta and Lisbon will be visited during the course of thirteen days, with sufficient time allowed to go ashore for excursions. The prices once again are astonishingly cheap. Tourist-class fares range from £50 to £74 and first-class from £85 to £190 if you are requiring a suite.

From April 1 you will be able to fly direct from London to Warsaw. There is to be a new service by B.E.A. twice a week, using Viscounts, which will complete the journey in five hours. This is the first phase of the projected service to Moscow.

This year marks an interesting stage in the development of couchettes which in themselves sprang out of that British phenomenon the old third-class and now second-class sleeper. More and more have become available on the Continent as country by country has had to adopt their use. With Italy deciding to introduce them for the first time, it means that one of the last barriers has fallen and that it will now be possible to obtain couchettes on all principal trains from Channel ports.

W. D. C. C.

FROM THE LEANING TOWER: The Baptistery and Cathedral at Pisa, in Northern Italy, can be seen in this Campanile, which leans several feet from the perpendicular. On the right are the cloisters of the during the last war. There is now a direct air service between this country and Pisa, which lies near

THE PORT OF SPLIT, IN YUGOSLAVIA: The main interest to the tourist of this important port on the Dalmatian coast is the great Palace of Diocletian and its historic connections. Even to-day 3,500 houses in the city are within the walls of the Palace. The view of the harbour was taken from the tower of the cathedral at Split. Near Split there are excellent beaches for bathing and several interesting excursions. This area of Yugoslavia is especially notable for the fine Roman remains to be found there.

picture taken from the top of the famous Campo Santo, which was destroyed by bombing many attractive seaside resorts on the north-west coast.

of sandy beach, with a vast pine forest along the sea front, temperate climate and maximum sunshine. Forte dei Marmi and Marina di Pietrasanta are two recommendations. Keep in mind, too, the nearby island of Elba, where there are also fine beaches and good hotels. In addition, it is very picturesque. The sea-trip from the mainland to Portoferraio takes only 80 minutes. Another approach is by steamer from Leghorn, calling on the way at the small islands of Gorgona and Capraia. Recommended resorts are Marina di Campo and Poggio. Incidentally, the wines of Elba are noted for their quality—and strength.

AUSTRIA.—The Salzkammergut lakes lie in three Austrian provinces, namely, Upper Austria, Salzburg and Styria. Among the many resorts, my own favourites are St. Gilgen, Hallstatt, and Traunkirchen. I will also recommend the pleasant lakeside village of Fuschl, where there is bathing, boating and fishing, while the surrounding countryside is very beautiful and ideal for walking. Fuschl is also an excellent centre for excursions; these will take you into Salzburg itself, to the other lakes in the Salzkammergut, to Germany, to the Grossglockner, and to the Hallein salt mines. It would be a useful base, too, for those wishing to attend the Salzburg Festival, when the city itself is very overcrowded.

YUGOSLAVIA.—Many tourists travelling by ship between Rijeka and Dubrovnik do little more than catch a glimpse of Split from the deck of their vessel. This is indeed a pity, for Split is one of the most remarkable towns in Europe. It is to-day an important port, but its main interest to the tourist is the great Palace of Diocletian. The story of this Emperor and his palace is a fascinating chapter of history. It was to this great coastal building that the great monarch retired to spend the last ten years of his life following his voluntary abdication of imperial honours.

I never think of Diocletian's Palace as being in Split, but rather of Split as being within the Palace. To-day the town has expanded considerably, but there are still over 3,500 dwelling inside the palace walls. Although much of this mighty work has long since disappeared, enough was left in the middle of the eighteenth century to attract Robert Adam, the great English architect. The face of London would, indeed, be very different if he had never visited Split.

Obviously, this city is one in which the person who is content to meander gets the most satisfying results, especially to those with architectural interests. But even to the layman there is an inexhaustible appeal, more particularly when the *Korzo* is in full swing. The *Korzo* is one of the most interesting social customs in Yugoslavia, and it corresponds to the *paseo* in Spain, with the people engaged in strolling, within definite limits, in a town. Quite definitely in Split, you should enquire from Putnik (the local information office) where best to witness this evening spectacle. Worth noting, too, is that the Park Hotel is a pleasant place in which to stay—the Bellevue can also be recommended—although I would be very tempted on a return visit to lodge in a little hotel just inside the eastern gate which has one quality at least, that of being delightfully situated.

From Split, near which there are many good bathing beaches, there are some interesting excursions. Notably, to nearby Solin with its interesting Roman remains, and to Trogir, a living museum of the Middle Ages, with a beautiful thirteenth-century cathedral and some fascinating streets. Also from Split, with the aid of Putnik's services, there are many other interesting excursions which can be made. And in all cases, too, you will find opportunities for swimming and sailing—or just looking at the people as they walk around through the streets and in the colourful market-places.

GREECE.—To linger awhile in some district of Greece must surely be the wish of many people. And where better than in Argolis, with Nauplion as a base? For within easy reach are such famous classical sites as Mycenæ, Tiryns and Epidaurus. Nauplion itself, with its harbour and town, built on a rocky peninsula, is an attractive place, with many interesting monuments and a couple of good hotels, one of which stands on the nearby islet of Bourdzi a romantic spot. You can reach Nauplion easily either by fast diesel-train service from Athens or by bus, while excursion facilities are available in the town. There is also good tourist accommodation at Mycenæ and Epidaurus. Then, about five miles from Nauplion, there are excellent bathing beaches at Tolo and at Assini, while the latter also offers an acropolis, cyclopean walls, passage tombs, and Roman baths.

USEFUL ADDRESSES

Austria State Tourist Dept., 219, *Regent Street, London, W.1.*
French Government Tourist Office, 178, *Piccadilly, W.1.*
Greek Dept. of Information, 34, *Hyde Park Square, W.2.*
Italian Tourist Office, 201, *Regent Street, W.1.*
Moroccan Tourist Office, 22, *Hans Place, S.W.1.*
Portuguese Tourist Office, 20, *Regent Street, S.W.1.*
Spanish Tourist Office, 70, *Jermyn Street, S.W.1.*
Barbary Tours, Woodlands, Shepherdswell, Dover.
C.I.T. (England) Ltd., 10, *Charles II Street, S.W.1.*
Contours Ltd., 72, *Newman Street, W.1.*
Erna Low Travel Service Ltd., 47, *Old Brompton Road, S.W.17.*
Fairways and Swinford Ltd., 18, *St. George Street, W.1.*
International Services Ltd., Number Seven, Haymarket.
Lammin Tours Ltd., 67, *Blenheim Terrace, N.W.8.*
Oceanways S.S.A. Ltd., 23, *Haymarket, S.W.1.*
Sir Henry Lunn Ltd., Marble Arch House, 36, *Edgware Road, W.2.*
Swans Tours, 260, *Tottenham Court Road, W.1.*
Wayfarer's Travel Agency Ltd., 20, *Russell Square, W.C.1.*
Yugoslav Tourist Office, 143, *Regent Street, W.1.*

LONDON'S SENSATIONAL PLAY

The British Première of Tennessee Williams's "Cat On A Hot Tin Roof"

Cat On A Hot Tin Roof, the latest play by the American dramatist Tennessee Williams, has at last, after much heralding, made its appearance on the London stage—at the Comedy Theatre. It has previously been seen in New York, where it was produced by Elia Kazan, and in Paris, where the production was by Peter Brook. Long published in book form, the play, nevertheless, has not received the Lord Chamberlain's licence. It is, therefore, being presented as a club theatre production by the New Watergate Theatre Club. Resolutely outspoken, *Cat On A Hot Tin Roof* will undoubtedly be a main conversational topic, for this play is in a true sense wholly shocking, with many peculiar, powerful moments. The dramatist's confessed intention is to deal with human extremities of emotion. The play has an exceptional stinging turbulence throughout and in certain parts there has been nothing written perhaps for years of a theatrical force to compare with it. The production is by Peter Hall.

A MOMENT OF GREAT POIGNANCY IN A NEW VIOLENT AND CONTROVERSIAL PLAY: In this scene from *Cat On A Hot Tin Roof* a hysterical Big Mama (Bee Duffell) is calmed by Reverend Tooker (Roger Winton), Mae (Daphne Anderson) and Gooper (Alan Tilvern) after being told that her husband is doomed to die of an incurable disease.

***On left*—**

"MAGGIE" AND "BRICK": "I'm like a cat on a hot tin roof," Margaret (Kim Stanley) tells her husband, Brick (Paul Massie). "Then jump off and take a lover," he advises.

THE GRUELLING CONFRONTATION BETWEEN FATHER AND SON: Big Daddy (Leo McKern), having asserted that the relationship between his son and his son's dead friend was unusually close is told that he is on the brink of death.

ONE OF THE MOST DARING SCENES EVER TO BE WITNESSED ON THE LONDON STAGE: His nerves stretched to breaking point as a result of his wife's continual taunts, Brick, in a moment of fury, savagely attacks his wife with a crutch as she lies helpless and prostrate on the bed.

FRUSTRATION, FRIGHT AND DESPAIR: An enraged Big Daddy snatches his son's crutch and chases his terrified wife, after she has interrupted the scene in which father and son are savagely tearing the truth out of each other.

LAND OF THE AUTOMOBILE

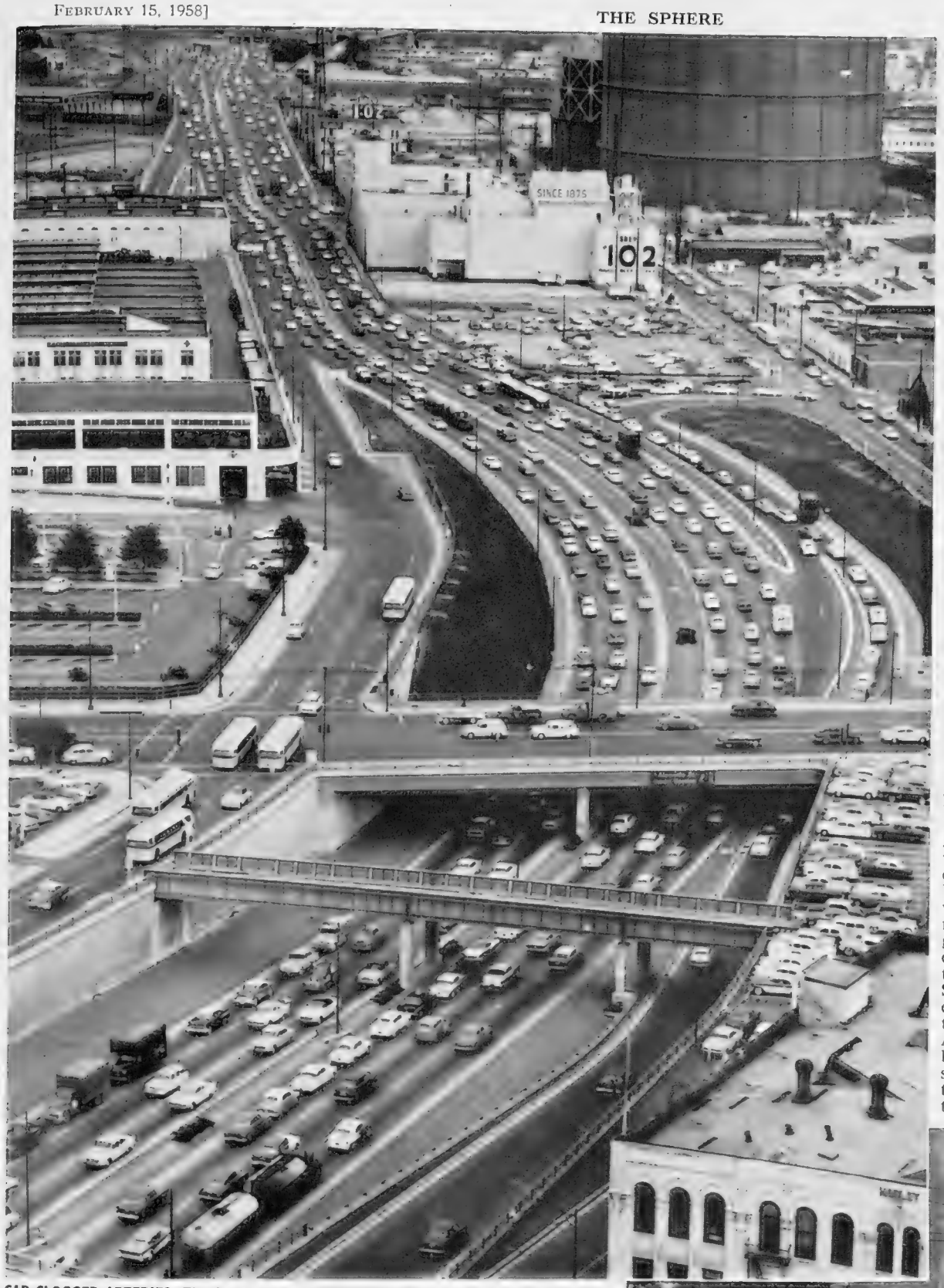
Year by Year America's Traffic Problems Increase in Spite of Improved Roads and Parking

In no country in the world has the car flourished so well as in the United States of America. A huge annual output from the factories at Detroit, constantly bordering on and sometimes tottering into a state of over-production, coupled with high-pressure advertising, sales and service techniques, has made the car the symbol of a normal American life. Most families own one, and can afford to own one. In the city of Los Angeles there are more cars than families—one for every two-and-a-half persons.

The American car industry is geared to a system which calls for the average American to change his car for a new model every two or three years. It is, in fact, to his advantage to do so, for the market value of a car depreciates very rapidly after about two years of life. Finance corporations do a great amount of business in automobile transactions, and more often than not the citizen of average means is never in complete possession of his car.

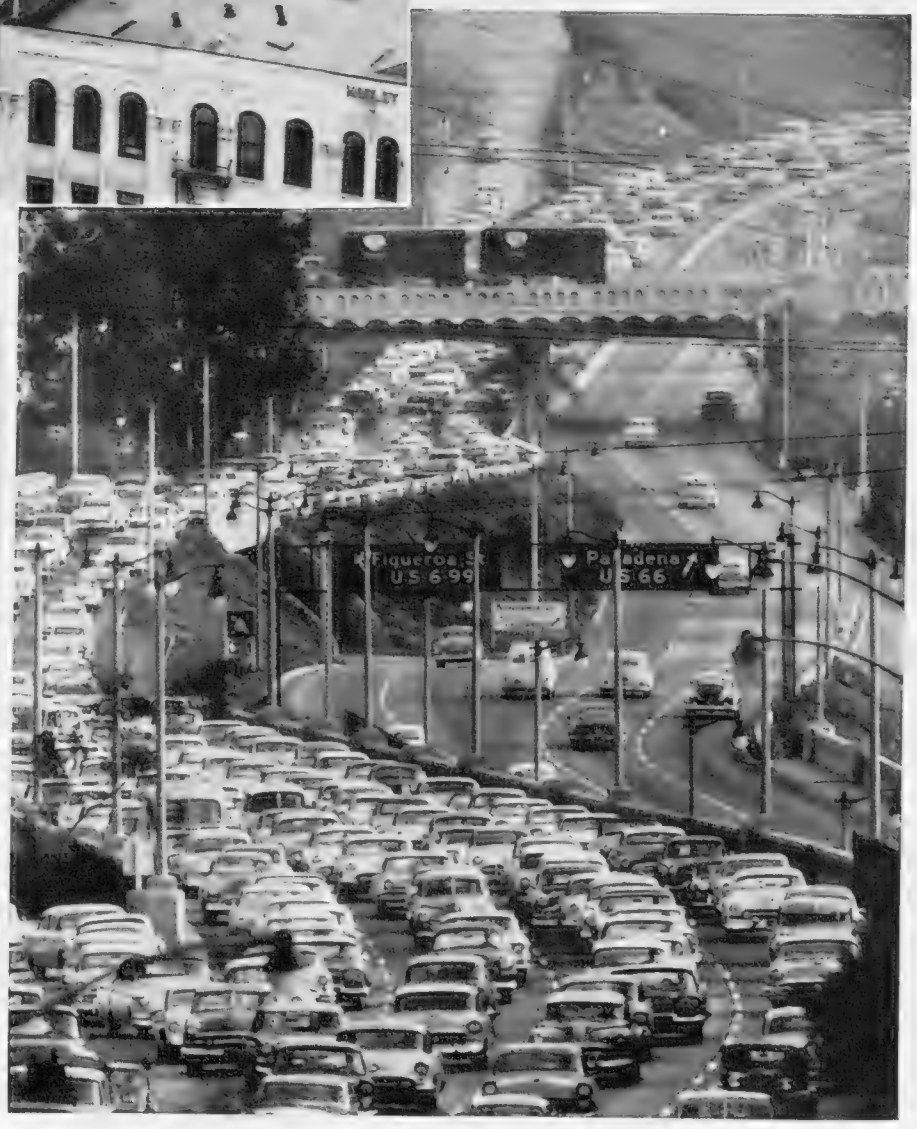
In post-war years the industry has resolved itself into three large competitive combines—Ford, Chrysler and General Motors—each producing a number of famous makes under its ægis. Two smaller corporations, American Motors and Studebaker-Packard, hold less than 10 per cent. of the market. Each year there must be a new "line" and the latest car models are unveiled after careful publicity campaigns in the same atmosphere of tense and impatient excitement which characterises the Paris collections.

To meet the increasing ratio of cars to Americans, which shows no signs of letting up, vast road projects are under way or have been completed. It is now possible to drive from New York to Chicago almost entirely on express roads which have no intersections, traffic lights or roundabouts, and the travelling time has been greatly reduced. The New York Thruway now extends across the State from Buffalo via Albany to New York City, without a single traffic block. Service and refreshment stations are to be found every twenty-five miles or so, and all exits are in the form of filtering ramps from the main road. Although the transit problem between cities can be solved with time and money, the cities themselves are getting more and more clogged by traffic. The latest parking lots are now taking the form of multi-storey buildings.



CAR CLOGGED ARTERIES: The San Bernardino—Santa Ana Freeway, near Los Angeles, California, is crammed with cars, a reminder that in Los Angeles County there are more cars than in South America and Asia combined together. Although there are hundreds of cars in this picture only about half-a-dozen buses can be seen.

A MODERN PARKING LOT: "World's largest mechanical parking garage" says the sign on this city-owned building on Wacker Drive at State Street, Chicago. A car can be left here all day for 3s. 6d. *On right*—Morning rush-hour traffic pours into Los Angeles off the Pasadena Freeway. Even the most modern highways are overloaded by the ever-increasing number of cars on the road.



CARNIVAL IN VALENCIA

The Spanish City's Festival of the Fallas

AN OPPORTUNITY FOR CRITICISM AND SATIRE: During the Festival of the Fallas in Valencia a crowd gathers round a float in the Plaza Collado. Its purpose is to criticise the local authorities regarding their taste in the arts. The carnival, which ends in the burning of the Fallas (or floats), gives the inhabitants an opportunity of expressing their feelings on many subjects.

ENJOYMENT FOR ALL AGES: A float with satirical purpose has been erected in the Old Town of Valencia. *On left*—Children march in procession through the streets.

THE SERIOUS SIDE OF THE CELEBRATIONS: The girl wearing traditiona costume carries a bouquet which she will take in procession t the cathedral and place in front of a statue of the Virgin Mary

AMONG the Latin countries Spain is one of the most noted for the annual festivals which are held in its various towns. Seville springs to mind as perhaps the most outstanding, but there are also many others. Among them the Festival of the Fallas in Valencia takes a high place.

The third largest city of Spain lies on the Mediterranean coast. Exceeding Valencia, with its population of 542,600, are Madrid (1,868,800 inhabitants) and Barcelona (1,361,000 inhabitants). The Festival of the Fallas is traditional, but probably only recently has it begun to have a reputation outside the Iberian Peninsula and attract foreign visitors.

The purpose of the carnival can be described as both secular and religious. On the lay side it provides the inhabitants with an opportunity to express their feelings upon many local topics. This is done through the fallas, or floats. Most of them are built with a view to drawing the attention of the local authorities to some particular point of administration. An example on these pages is a picture, taken at last year's festival, of a float satirising the official local patronage of art and music. Another instance is the huge representation of Samson pulling down the Temple pillars. Its purpose is to pour scorn on certain aspects of local building policy. The floats are usually made of wood and *pâpier-mâché*. Children, too, have their part in the merry-making with special processions of their own.

The Festival lasts for ten days, from March 9 to March 19—the conclusion being on St. Joseph's day. During the last three days the floats, many having been paraded through the city, are ceremonially burnt. The bonfires are occasions for great demonstrations of joy from the onlookers. It is during this period that a roaring trade is done by the sellers of *bunuelos*, a species of fritter. On every street corner in the centre of the city one will find purveyors of these delicacies.

Fireworks and bonfires turn night into day. The dense crowds packing the streets and squares allow little chance of sleep to non-participants. In the conclusion th inhabitants have been given a grand opportunity for self expression. However, grumbles and grouses are confine to local affairs. Demonstrations regarding nationa politics would have no part in the festival.

In Spain, Roman Catholic Christianity is still a par of everyday life. Therefore the Festival of the Fallas i also a religious occasion. On its last day—the Feast o St. Joseph—March 19, a magnificent procession passe through the streets. In it walk women and girls, al wearing their mantillas and other traditional costume They carry posies of flowers. On reaching the cathedra which is dedicated to Our Lady and was built betwee 1262 and 1482 on the site of a Roman temple and a late mosque, the participants in the procession lay their flower at the feet of a statue of the Virgin Mary. In spite of al the satire and criticism associated with the Fallas an the opportunities thus offered, this religious ceremony i probably for most Valencians the climax of their colourfu annual festival.

ENJOYING THE CARNIVAL: A large number of people have been attracted to one of the main squares on a sunny spring afternoon during the period of the celebration of the festival.

NO RESPITE AT NIGHT: Rockets shoot above the vast throng packed before the Town Hall with its clock (on right) at two o'clock in the morning. In the deserted square on the left is a falla which is 50 ft. high. Representing Samson shaking the temple pillars, it is directed against certain local building projects.

PREPARING TO WALK TO THE CATHEDRAL : The group of girls, with their mantillas and flowers, wait to participate in the procession to the cathedral. This superb spectacle takes place on the last of the ten days of the Festival of the Fallas—on March 19, the Feast of St. Joseph.

A HUMAN DECORATIVE ELEMENT: The girls in shawls and headdresses watch one of the processions. Throughout Spain there are many famous local festivals. The celebrations of the Fallas are attracting an increasing number of visitors.

THE DAY OF ST. VALENTINE

The Mating of Birds May Have Inspired the Modern Habit of Sending "Valentines"

By BRIAN VESEY-FITZGERALD

ST. VALENTINE'S DAY has been fixed by popular tradition (a tradition which goes back to early medieval times) as the day on which the birds first mate. The date is, of course, no absolute one, and is not even very representative, but, all the same, it is true that by the second week in February—and the weather does not appear to play any big part in this at all—there is usually a visible tendency for the winter flocks of our native birds to break up and settle down in pairs.

However, St. Valentine's Day is too early to mark the central movement of the breeding season, and certainly much too late to mark the beginning. There is, of course, a very considerable difference in the pairing times of the different species, and the date varies even more considerably among individuals of the same species. On the whole, I think, it is a mild winter and an early spring which tempt the birds to pair and nest the sooner. But their song, which is so essential a feature of the breeding season, often seems to be evoked more by the increase of light than by the increase in warmth. The wilder and more fiercely the wind blows the more ardently does the missel-thrush sing, yet the turbulent weather that arouses so great a passion of song does not necessarily induce earlier nesting. The missel-thrush—that, by the way, is not nearly so descriptive a name as the old country one, "stormcock"—is, however, one of our earliest nesters, and eggs in the second week of February are not at all uncommon. Though the missel-thrush is pre-eminently a bird of winter, delighting to seek the uppermost branches of a tall tree and in exultant, ringing song to defy the elements (I heard one this January singing during a driving snow-storm and with the temperature 6 degrees below freezing point), he is not really in full song until February.

In January the only constant singers are the song-thrush and the robin, both of whom begin to sing in August or September, and do not stop again until July, except perhaps in the coldest of cold spells. The missel-thrush does sing in January, but in rather a desultory fashion. But with each passing day of February his song gains in power and energy. The blackbird is a later starter than the other two thrushes and prefers to await the fullness of spring before abandoning himself to song. But even he may be heard before the end of February—in the morning or at sunset, but rarely at midday. Indeed, I have known two blackbirds who obviously had calendars and knew all about St. Valentine's Day.

For the past four years I have heard the same blackbird for the first time on or about St. Valentine's Day—the actual dates have been February 13, 14, 14, and 15—though the weather has not always been the same. I know that he is the same bird because he has a white patch on the nape of his neck. He is about the garden, almost always about the lawn, throughout the year: and he sings his first song from a post at the edge of the lawn, and always his first song at eventide. It is usually about four days before I hear him in the morning, and about ten days before he is singing really well. The strange thing is that, away back in 1939 and up until 1942, there was another blackbird here with almost the same habits. This bird, too, sang from the post at the edge of the lawn, and this bird, too, had a patch of white on the head and also a white feather in the wing.

It is now, before the leaves are on the trees, while the singers are easily visible, that one may best learn to distinguish the song of the missel-thrush from that of the blackbird. This is the season when helpful parents should take their ornithologically-minded children out into the countryside and give them their first lessons in the recognition of bird song. Something of the mellowness and softness of the blackbird belongs also to the missel-thrush: sufficient to make many a man believe that he has heard a blackbird when no blackbird sings. In fact, the song of the missel-thrush has certain marked limitations, and by these you may know him. The phrases are shorter and are broken and repeated monotonously.

The blackbird has an amazing compass and a wonderful ability to turn his golden melody over in his throat, adding yet further richness to vast wealth. (Personally, I think that the blackbird is a much better singer than the nightingale—it is, I believe, the darkness and the freedom from competition that has given the nightingale his great reputation—but in this I suspect that I am in a minority of one.) So, if you listen for any length of time to the missel-thrush, you will find in his song, I think, something untutored. There is a quality of wildness, almost of ignorance, something quite foreign to the song-thrush or the blackbird, though present also in that blackbird of wild places, the ring ousel.

But to return to St. Valentine's Day. It is easy enough to understand how the day came to be regarded as that on which the birds first mate. Any observant countryman, watching the birds of his neighbourhood, could not fail to notice that, in some of them at least, there is a change of habit round about the middle of February, a tendency to settle down in pairs, a marked increase of interest in the opposite sex. Why has the day also come to be connected with love and courtship among humans? That, surely, is very odd.

I do not think that there can be any connection with St. Valentine himself. This blameless gentleman, to whom no breath of scandal ever attached, was a Roman priest who suffered martyrdom during the Claudian persecution of A.D. 269. The association with the saint is obviously accidental.

I do not think that there can really be any connection with human habits (as undoubtedly there is with avian habits) unless, of course, human habits have undergone a most drastic change since medieval times. For that there is no evidence whatsoever. So far as my observation goes, I have seen nothing to suggest that men (or women, for that matter) are any more amorously inclined at this season than they are at any other, in spite of the evidence of a good deal of poetry and such songs as "In the spring a young man's fancy." So far as I can tell, all seasons and all weather, where dalliance is concerned, come alike to the human species.

Then why this association with St. Valentine's Day, why "valentines"? I think that we have here yet another survival of a pagan festival: the festival of Lupercalia, which was held annually in Rome on February 15. This was a festival of purification held in connection with the worship of Lycæan Pan, or, as some scholars maintain, with the worship of the wolf that gave suck to Romulus and Remus. Juno Februalis was also worshipped at the Lupercalia. The ceremony was held at the foot of the Palatine Hill near the cave of Lupercus, in which a bronze statue of a wolf was kept. Goats and dogs were sacrificed and their skins were cut into long strips, *februa*, and the priests would then run along the walls of the city lashing anyone they met. The women would line up to receive a cut, because this was thought to ensure fertility. The festival was discontinued in A.D. 494 when Gelasius substituted for it the festival of the purification of the Blessed Virgin Mary, held on February 2.

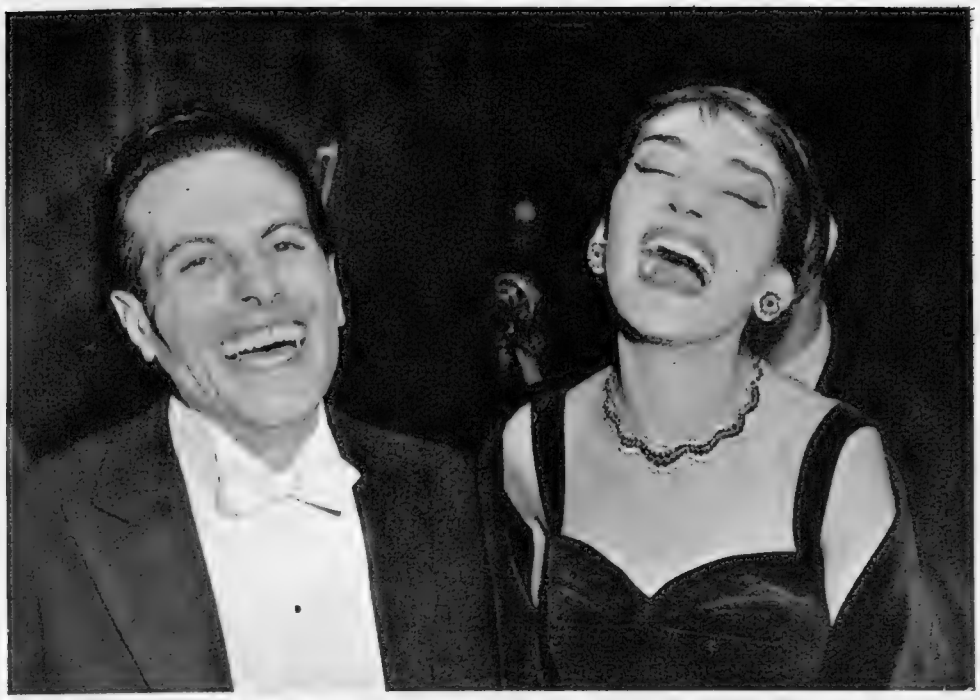
But it takes more than that to kill a pagan festival, and the memory survives to this day, though in a very debased (or very civilised) form. It was on St. Valentine's Day that marriage divination was practised (and perhaps still is) in many parts of the country. Girls used to pin bay leaves to their pillows so that they might dream of their future husbands. In Derbyshire it used to be said (and quite recently) that if a girl was not kissed on St. Valentine's Day she would not be married that year. The girls of Derbyshire, needless to say, used to take every possible precaution to guard against this ghastly fate. And in many parts of the country young people of both sexes used to write the name of their loved one on a slip of paper, roll it up in a ball of clay, and drop it into a wishing well. Perhaps they still do: though I fancy that approach is to-day usually more direct.

I think that it is from this that the custom of sending valentines has arisen. Strictly speaking, I understand, the "valentine" should be anonymous, designed to arouse curiosity; no more. I must confess that this has always seemed to me to be rather pointless. But, then, I am no expert on the matter. No one has ever sent me a "valentine." And I have only sent one in my life. That was in my first year as an undergraduate and the recipient was a most beautiful girl in a chemist's shop in the Cornmarket. I do not know if it aroused any curiosity. That's the worst of anonymity. Or is it the best?

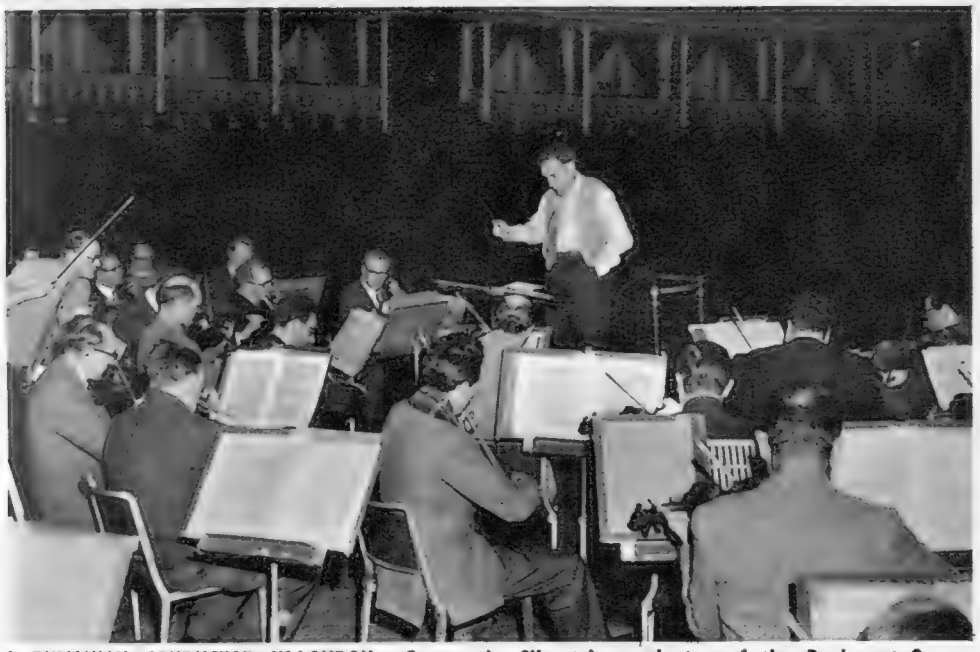
WINTER SONGBIRDS: These two bird pictures were taken by Eric Hosking. *Above* is the blackbird, whose song has an amazing compass. *On left* is the missel-thrush. Something of the mellowness and softness of the blackbird belongs to the latter bird. Both begin their song of mating around St. Valentine's Day, which probably accounts for its modern connection with amorousness.

WORDS AND MUSIC

Madame Callas in America; Honour to the Memory of Two Great Conductors



PRIMA DONNA IN A HAPPY MOOD: Maria Meneghini Callas, the Italian opera star from Milan, laughs happily in Chicago after giving a benefit concert at the Civic Opera House. With her is Nicolo Resigno, conductor of the concert which was given to a crowded audience. Madame Callas' programme included excerpts from *Norma*, the opera from which she withdrew during the first night of the season at the Rome Opera House early this year. This incident caused a major sensation.



A RUMANIAN CONDUCTOR IN LONDON: Constantin Silvestri, conductor of the Bucharest Opera, Ballet and Radio Orchestra, rehearses the strings of the London Philharmonic Orchestra in the Royal Albert Hall, London. This was a preparation for the concert he gave in the series of Industrial Concerts sponsored by the L.P.O. with the assistance of the Arts Council. The programme included Bach's Brandenburg Concerto No. 3 and Haydn's Symphony No. 99.

MADAME CALLAS HEARS THE VERDICT: She is leaving the offices of the Board of Governors of the American Guild of Musical Artists in New York. It was reported that she had appeared before the Board to answer charges of alleged breach of contract brought against her by the San Francisco Opera Company. After a closed session it is understood that the Board found that Madame Callas was "not wholly justified" in refusing to sing for the Company last autumn. However, they decided that no penalty would be imposed, but that the meaning of the decision would be conveyed to the singer, who, on her side, had claimed that illness had prevented her from appearing. Ill-health was the reason given by Madame Callas for her refusal to continue during the performance of *Norma* in Rome on January 2 this year. The incident occurred on the first night of the season at the Teatro Dell' Opera, when the distinguished audience included Signor Gronchi, the President of Italy. After Madame Callas had refused to appear for the second act it was announced that the performance would be abandoned and there was uproar in the theatre. For several days controversy raged regarding whether her action was justified.

HONOURING THE MEMORY OF SIR CHARLES HALLÉ: Sir John Barbirolli lays a wreath on the Hallé family grave in honour of Sir Charles Hallé, who was the founder of the now famous Manchester orchestra which bears his name. On January 30 Sir John conducted the centenary concert of the orchestra at Free Trade Hall, Manchester.

A BUST OF TOSCANINI: It stands in the foyer of La Scala Opera House in Milan and was unveiled on the first anniversary of the great conductor's death. It was in the Italian city that Toscanini first made an international reputation which grew through the years until he was generally accepted as the greatest conductor of his time. He was aged eighty-nine when he died. Music lovers in Britain particularly remember his interpretation of the Beethoven Symphonies with the B.B.C.

The World of Books

A WOMAN'S NOVEL OF EXCELLENCE

A Realistic Love Story; The Humour of the American Civil Service; William Faulkner's Vigorous New Work; Another Thomas Costain Historical Romance

TO say that a specific novel is a woman's book, not only because of its authorship but because of its obvious reading public, is not to denigrate it. On the contrary, there is often about such a book an exceptional directness and sincerity which gives it a peculiarly sharp focus. STRANGERS' GALLERY (Cassell. 13s. 6d.) is a case in point and a good one. Mrs. Diana Raymond has written the story of a young woman separated from her husband by what is euphemistically known as a lack of faith and is, in fact, her discovery that he is having an affair with another woman. In the charming little house on the Hampstead-like hill, she sets about reviewing her situation, but her reflections are interrupted because she is young, attractive and (see above) a woman. The inconclusive love-affair that helps her to make her final decision is beautifully suggested, and where the plot is at its least satisfactory, it most clearly resembles true experience. Incidentally, the two children in the story seem real enough to come, smiling but grave and preoccupied, into one's own room at any time.

THE LINNET IN THE CAGE (Heinemann. 15s.) is another novel in the same tradition, told in less elegant but often wittier terms. ". . . his head clerk, Layman, erroneously supposing that blood is thicker than water, had confirmed the appointment," is a fine description of a busy man's obligation to meet his dictatorial sister. Miss Barbara Goolden sees and recounts this kind of thing exceptionally well and her story of a courageous, unhappy girl is none the worse for having a happy ending, or a philosophical turn about the problems of the not-so-middle-aged.

In the blurb of A CHANGED MAN (Hutchinson. 15s.), by Mr. Paul Ferris, the publishers, with commendable perspicacity, declare that "Each generation gets the literary hero it merits—or deserves." Qualification for this accolade seems rapidly to be passing from the angry young man to the tiresome young man. Here the theory is that Gregory Hawkins, the hero of this novel, although meritoriously high-minded, is a character who deserves all he gets. And he gets plenty. A family of mad, middle-aged cranks, a young brother upon whom he wastes his affection and who repays it with meaningless annoyances, the wife whom he has newly married and who is a bolter by nature, and the rest with the moral attitude and manners of the farmyard.

All this could be bearable and even interesting if any of these characters came to life. Their talk is amusing, their actions entertaining if outrageous, but it is difficult to believe in any of them. This is a pity because Mr. Ferris can write very well when he wishes.

I suppose that when one considers the vagaries of the Civil Service, one naturally thinks of it as *our* Civil Service, and so it is possibly a boon (besides being highly educational) to discover that these fine organisations behave just as inscrutably in the United States—the main difference apparently lying in the fact that they have coffee breaks and we have tea breaks. Mr. Leonard Drohan, who must know what he is writing about, tells a story that is alternately hilarious and alarming, in COME WITH ME TO MACEDONIA (Hutchinson. 15s.). For myself, I found it the funniest book that I have read for some time and recommend it to you on those terms, always supposing that Americanisms, whether of speech or behaviour, are not too exotic a brew. The hero—and he really is one in his diffident way—is a civilian working in a large organisation which is principally engaged in sending material to the U.S. Army during the Korean War. What we would call the brass-hats and they would refer to as the top brass are in official charge of the operations while, in fact, the least silent of all services gets things done. There is very little comfort for serious thinkers here but many, many laughs.

THE "NEW LINE" FOR PARIS PAPER STANDS: Replacing the traditional wooden news-stands in the streets of Paris is this new type of enclosed structure. One is seen here in position near the Luxembourg Gardens. Apart from offering weather protection to the vendor, there is a great deal of attractive display space for books and magazines on the new stand.

The new book from that distinguished American writer, Mr. William Faulkner, is THE TOWN (Chatto and Windus. 16s.), and very impressive it is. Mr. Faulkner continues his analytical study of a Southern family—that is to say, a family from the Southern States of North America—and does it with considerable vigour. The family's name is Snopes and its most active member has the first name of Flem. That is some kind of key to the whole business, which is a powerfully-written, allusive and, as far as I was concerned, very depressing affair.

ROAD TO SOCORRO (Hutchinson. 12s. 6d.) has its foundations in American soil, too. Mr. Charles O. Locke has written about a situation in that vast region that includes Texas and is roughly known as the south-west, at a time when, if law and order existed, it was rather differently administered. In the 1880's the West was beginning to take shape as a legend and, understandably, the legend has survived until to-day. A book of that rare kind which one picks up with mild interest and finishes with rapt attention.

The same could not be said (at least, by me) of THE DREAMERS (Gollancz. 12s. 6d.), by Mr. Roger Manvell. This lugubrious little book is an expression of more nightmares than, perhaps, the author had counted on. The setting is an English village, a fairly prosperous one, far from quaint and inhabited only by the regulation number of eccentrics. Indeed, the persons who do the dreaming which forms the theme of the story are mostly reasonable characters or at least accessible to reason. It is an odd book, aiming at the nerve-racking and at least achieving the nervous strain.

KAYWANA BLOOD (Secker and Warburg. 21s.) is the new volume in Mr. Edgar Mittelholzer's saga of a family in Guiana begun, some six years ago, with *Children of Kaywana*. Both in mood and in continuity of passionate expression, the story follows familiar lines. Briefly, the problem that the author examines is the strain of fiery blood in a small dynasty of Dutch settlers, making them the victims of fierce inner conflict as their strong common sense comes to odds with their equally fiery impulses. The time is the eighteenth century, the background, which is admirably documented, is a plantation near a Caribbean shore, and the protagonists are members of a family whose natural bents see-saw between the patriarchal and the libidinous.

Mr. Thomas Costain's new historical romance is, as one expects from this serious American writer, based on the most painstaking research and its action is all the more smooth for the sureness of its foundations. BELOW THE SALT (Collins. 16s.) is a tale of England and Europe in King John's days and it builds up through the fierce events that led to the framing and the signing of Magna Carta. There are moments when one could wish that Mr. Costain would take his eyes off the elaborate charts he uses in his compilations, and give more attention to the graces of a literary style.

THE RING-GIVERS (Michael Joseph. 15s.) is W. H. Canaway's story of the days of Beowulf, in the sixth century, which often seems more remote to us nowadays than the period, more distant, in fact, when the Roman Empire was at the height of its power. Strange, simply written and powerful in its own unpretentious manner, this is a book to remember and one to revive early memories of reading about Beowulf in a more childish form.

Thriller of the week is indubitably THE GAZEBO (Hodder and Stoughton. 12s. 6d.), by Miss Patricia Wentworth, as neat a practitioner of the detective-story and the slyly understated clue as one is likely to meet in a day's march through a lending library. Miss Silver, that inimitable retired governess who knits her pink and woolly way through so many mysteries, is the heroine of this story, which has a placid suburban setting and the violent contrast of murder to galvanise it.

Vernon Fane

AFRICA SURVEYED

Two Handbooks That Open the Door to Adventure

A quarter of a century ago this reviewer had the opportunity of visiting South Africa on a business trip that combined a good deal of pleasure, or to put it the right way round, a pleasure trip that earned enough income for it to be pleasurably extended. It was then that a first acquaintance with the YEAR BOOK AND GUIDE TO SOUTHERN AFRICA ripened into genuine admiration. The 1958 edition (published by Robert Hale at 10s. 6d.) is the most complete ever issued. It is edited annually by A. Gordon-Brown and published for the Union-Castle Mail Steamship Company. The special virtue of this remarkable guide lies in its range of interests; under each entry the businessman can be sure of all the vital statistics he requires about any given town or city, the sportsman can learn, likewise, of the potentialities of the area, and the historic background is faithfully sketched in.

Companion volume to this is the Union-Castle's YEAR BOOK AND GUIDE TO EAST AFRICA (Robert Hale. 8s. 6d.). This is a slightly younger brother and naturally slightly slimmer, but 400 pages of well-marshalled, essential detail, coupled with a first-rate atlas, once again testify to Mr. Gordon Brown's skilful editorship. Whatever takes you to Africa both these books will be found supremely useful and both gain measurably by reason of the excellence of the advertising material they contain.

Mena Orford is a doctor's wife. Faced with her husband's two-year appointment as medical officer to Baffin Island the prospect of a short sojourn in the Far North seemed alluring, but the immediate reality was dismaying, a makeshift home in a tiny and primitive settlement among people whose language she did not know was bad enough, and then came the departure of the supply ship and all communication with the known world. How Mena Orford and her family adapted themselves to the new conditions makes an enthralling story. JOURNEY NORTH (Arthur Barker. 15s.) is full of domestic cares and the incidents of the daily trivial round, battling with a monstrous coal stove and laboriously conserving melted snow, the only water supply; but all this detail gives the book its very real interest coupled with the fact that the author and her family were obviously relishing the battle and finding delight in the northland.

Colin Wyatt is another writer who presents an engaging picture of Canada's vast hinterland. In NORTH OF SIXTY (Hodder and Stoughton. 17s. 6d.) Mr. Wyatt describes the impact of modern development upon Eskimo life, how the invasion of mining machinery is affecting the old hunting grounds and creating a new way of life. Mr. Wyatt has travelled extensively through the vast area by dog-team, canoe, motor-ship and aircraft, living one day in the Stone Age igloo of the Eskimo and on another in the atomic age camp of the U.S. Navy. His record has breadth and perspective for he is interested not only in the new North but in its history and the early explorers.

An overall grasp of the true meaning of Roman civilisation is not lightly won, perhaps in part because the literature on the subject has been so extensive and few writers, not least Gibbon, have in any way seriously set about condensation. Professor Moses Hadas, hazarding that public interest in this subject is much wider than is generally realised, has produced a remarkable account of the HISTORY OF ROME (G. Bell. 18s. 6d.) from its origins to A.D. 529. In presenting his continuous history he has done so largely through the eyes of contemporaries, and his judicious selections, grave and gay, help to present a wonderfully comprehensive view. The author's commentary and the historic passages are neatly welded, so much so that the use of italics is essential.

Only the 20's could have produced the Bentley Boys, the racing drivers like Barnato, Birkin and Kidston who swept the board in that uneasy age of post-war speed mania. They were splendid fellows with a touch of flamboyance about all of them, but the man who created the Bentley car, W. O. Bentley, is revealed in his autobiography as the most retiring and unassuming of men. He calls his book W.O. (Hutchinson. 21s.), and perhaps never in history has a speed merchant had stranger initials.

Also autobiographical in vein is Frank Baines' LOOK TOWARDS THE SEA (Eyre and Spottiswoode. 21s.). These memories of childhood in the West Country, and Stepney, Poplar, Clapham and Battersea make curiously compelling reading. **R.C.E.**

CANADA:

A Special Section Showing Possibilities of Increased Trade from Britain to Canada as the Result of the Recent Canadian Trade Mission to the United Kingdom

BRITISH PARTICIPATION IN THE GIGANTIC ST. LAWRENCE SEAWAY PROJECT: WORK IN PROGRESS ON THE ST. LAWRENCE POWER DAM, A JOINT CANADIAN AND UNITED STATES UNDERTAKING: In the foreground is the Canadian half, for which the John Inglis Company, of Toronto, the Canadian associate of the English Electric Company, is providing sixteen 75,000-h.p. fixed propeller type water turbines. When the scheme is complete the dried-up area surrounding the dam will be flooded and water will flow through the structure to generate power. It will stand between Barnhart Island in the background and the Canadian mainland, near Cornwall.

THE St. Lawrence Seaway is the greatest engineering project ever undertaken in North America. When completed—it is to be inaugurated by the Queen in May of next year—it will serve a dual purpose. It will permit ocean-going ships of considerable size to sail through the Great Lakes to the heart of North America and it will provide power from a huge hydro-electric scheme. One of the vital structures in the power side of the project is the St. Lawrence Power Dam, which by itself is a gigantic enough undertaking. The entire seaway is a joint Canadian-United States concern and the Power Dam is being constructed by engineers of both nations. Over 1,600 ft. in length, it runs from the end of Barnhart Island, in the International Rapids Section of the river, to a point on the Canadian bank of the St. Lawrence, near Cornwall. The United States is responsible for the half starting from Barnhart Island and Canada for the half reaching to the Canadian shore.

In this Canadian section British enterprise has a by no means unimportant share. The turbines which will generate the power when the waters are unleashed to pour through the sluices of the dam are being provided by the John Inglis Company, of Toronto. This firm is the Canadian associate of the English Electric Company. Sixteen 75,000-h.p. fixed propeller type water turbines are being built in Toronto to the designs made by the English Electric Company. They will form the complete generating installation on the Canadian side.

Here is one example of close relations between British and Canadian industry. Towards the end of last year great stimulus was given to these trade ties by the visit of the Canadian Trade Mission, led by the Hon. Gordon Churchill, Canadian Minister of Trade and Commerce, to many parts of the United Kingdom. On the following pages of this special section of THE SPHERE are pictures and information about the tour of the Canadians, about some aspects of what British industry is already doing in Canada and about the great potentialities for considerably more trade from Britain to Canada.

CANADA'S TRADE CHALLENGE TO BRITAIN

Special Messages for this Section of "The Sphere" from Sir David Eccles, President of the Board of Trade, and Mr. Gordon Churchill, Canadian Minister of Trade and Commerce

From the Rt. Hon. Sir David Eccles

What a fine idea to publish a special section about Anglo-Canadian trade! The Canadian Trade Mission—the biggest and most important ever to come here from any country—has shown that Canada means to do more business with us if we can supply more of the goods and equipment she needs.

The Mission saw something of the part which British industry could play in Canada's far-reaching plans for development. Our traditional ties are strong, and will be stronger still following an expansion in Anglo-Canadian trade.

I made many friends among the members of the Mission. We all agreed there must be a vigorous follow-up. For my part, I visited Vancouver at the end of last December and I hope many more British businessmen will go to Canada this year. THE SPHERE *does well to encourage what H.R.H. Prince Philip called "the best thing that has happened in* 1957."

David Eccles

THE ARRIVAL OF THE CANADIAN TRADE MISSION: Mr. Gordon Churchill (standing on steps), Canadian Minister of Trade and Commerce and Leader of the Mission, clasps the hand of Sir David Eccles, President of the Board of Trade, at London Airport. In the right foreground is the Hon. George Drew, the Canadian High Commissioner in London. On extreme left is Sir William Rootes, who is the Chairman of the Dollar Exports Council, and next to him is Lord Home, Secretary of State for Commonwealth Relations.

"TO ENCOURAGE BRITISH EXPORTS TO CANADA": In these words Mr. Gordon Churchill (on right), in his special message printed on this page, describes the purpose of the Canadian Trade Mission which made an extensive tour of Britain at the end of last year. Sir David Eccles, who is seen with him in this picture taken at London Airport, also contributes a message.

From the Hon. Gordon Churchill

In simplest terms, the purpose of the Canadian Trade Mission which visited the United Kingdom between November 22 and December 18 was to encourage British exports to our country. We are faced, in Canada, with a heavy imbalance of trade with the Americans, and we must switch some of our purchases from the United States to Britain and other countries if we are to have a healthy economy.

The prime objective of the twenty-seven days we spent here was to provide a favourable climate for an increase in Canadian purchases of British goods. Expanding sales of the United Kingdom to Canada will in turn be beneficial for the expansion of Canadian trade with the United Kingdom. In particular the objectives of the visit of the Mission were:

1. *To demonstrate to Canadian industrialists, importers and others the great ability and potentialities of the United Kingdom to meet to a greater extent the import requirements of Canada;*

2. *To make British industrialists more aware of Canada's growing and diversified market, and to encourage them to sell more in Canada and to provide the services which are so necessary in the Canadian market;*

3. *To develop further friendly and close co-operation between British and Canadian businessmen and Government representatives, with a view to ensuring continuing and effective efforts on both sides to increase U.K.-Canada trade.*

In moving towards these objectives, it is not our intention to interfere with competitive purchasing. Many influences affecting Canadian purchasing in the United States—the matter of proximity, the constant pull of advertising and styling, the subsidiary-parent influence, the tendency to adhere to established lines of business—these and many other factors tend to result in extensive purchases in the United States of goods which might be obtained more economically elsewhere.

I should also emphasize that we are realistically aware of the difficulties which lie in the way of the achievement of our objectives. We recognise that the Canadian market is a highly competitive one, in large part owing to our proximity to the United States. At the same time, we know it to be a worthwhile and rewarding market, and one in which those overseas businessmen willing to spend the time and effort involved are able to compete successfully.

As a result of the visit of the Canadian Trade Mission, I am confident that there will be a great increase in British exports to Canada, and that the United Kingdom will again obtain the share of the Canadian market it had before the war.

Gordon Churchill

A ROYAL SEND-OFF FOR THE CANADIAN TRADE MISSION: Prince Philip sits in the centre of the group gathered before the luncheon given in London by the Canadian Chamber of Commerce at the conclusion of the Mission's tour of Britain. Seated with the Duke are, from left, Sir William Rootes, the Hon. Gordon Churchill, Mr. W. G. Fowler, the President of the Canadian Chamber of Commerce in Great Britain; the Hon. George Drew, Mr. J. S. Duncan, Deputy Leader of the Mission, and Sir David Eccles.

AT MANSION HOUSE: Sir Denis Truscott, the Lord Mayor of London, greets Mr. J. S. Duncan, Deputy Leader of the Mission and Chairman of the Hydro-Electric Power Commission of Ontario. Beyond them is Mr. Gordon Churchill. The occasion was a dinner given by the Lord Mayor to the Mission.

"A REAL SUCCESS"

Prince Philip's Summing-up of the Visit of the Canadian Trade Mission

In the course of his speech at the luncheon given in London on December 18, 1957, by the Canadian Chamber of Commerce to some 700 British and Canadian manufacturers, including the members of the Mission, Prince Philip said:

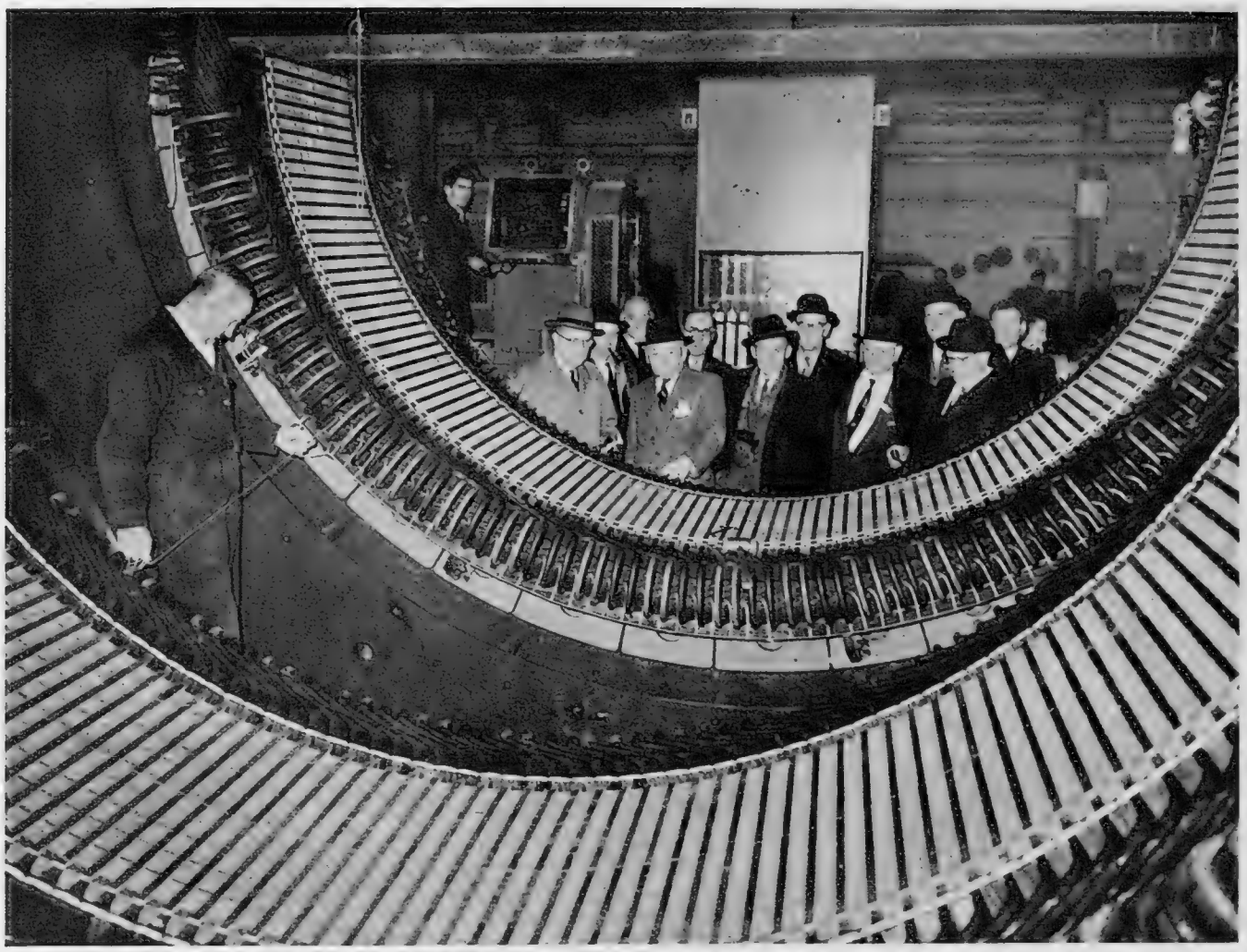
"IT'S always pleasant to be associated, however remotely, with a real success story. To-day we are lucky enough to be in the company of the Canadian Trade Mission, whose visit here has gone so well. The talks which, I imagine, led to the formation of the Trade Mission, were going on at the time the Queen and I were in Ottawa this fall. Although our visit was a very short one, it was thoroughly enjoyable.

In the two previous visits to Canada, in 1951 and in 1954, I had an excellent chance to have a good look around. I liked almost everything I saw, but above all else I was most impressed by the sheer speed of development. Canada is really going places. New towns, factories, power stations and mines are relatively easy things for an ordinary person to understand. Economics are not. But for once the economic situation which brought the Canadian Trade Mission to this country is simple enough for everyone to follow. Canada is buying too much from the United States and selling too much to the United Kingdom.

The arrival of the Canadian Trade Mission here with the declared intent of switching a considerable part of Canada's imports from the United States to the United Kingdom is the best thing that has happened to this country in 1957, and for some time before that. The enthusiasm of the welcome here must have shown the Mission the truth of that.

The links of Commonwealth are of two kinds—common ideals under a single head and the practical advantages of membership. The Trade Mission has shown how the two hang together. It came here knowing that it would find the same standards of honesty and fair dealing, the same commercial vocabulary and that they would be among friends. Here is ample proof that membership of the Commonwealth has an economic and commercial value as well as a political and moral advantage.

The good-will is there, the willingness is there, but it is not always obvious how much Commonwealth trade and commerce gain from that fact. You have laid the foundations of a new concept in British-Canadian trade and it now remains to British and Canadian industry and commerce to build a structure to our mutual advantage and prosperity."



INSIDE A GENERATOR: Members of the Canadian Trade Mission examine the stator of a generator at the Edinburgh works of Bruce Peebles and Co. Ltd., during their visit to the Scottish capital. A departmental manager of Canadian General Electric discussed with directors of the Glasgow engineering firm C. and J. Weir the possibility of supplying pumps for the first Canadian atomic power station.

THE VISIT TO CALDER HALL: The cooling loom over the Canadian visitors. The power stations under construction has

A MODEL TRANSFORMER: Mr. W. B. Laing (right), the Managing Director of Bruce Peebles Ltd., points out technical features on a model of a large transformer supplied to the Electricity Trust of South Australia.

Canada's Trade Challenge to Britain

TOURING BRITAIN

The Canadian Trade Mission which toured Britain between November 22 and December 18 last year was the largest ever to visit this country. The fifty-seven members of the Mission spent a month touring Britain's industrial centres and discovering examples of British enterprise. It is generally held that their visit was an unqualified success, and many British firms have well-filled order books as a result of the interest shown by the Canadians.

The party was headed by the Hon. Gordon Churchill, the Canadian Minister of Trade and Commerce, who described the journey as a "voyage of discovery." Members ranged from representatives of industrial concerns such as the Aluminum Company of Canada to the Senior Merchandise Director of the T. Eaton Company, Canada's largest department store chain.

Among the places visited by the delegates were the Harwell Atomic Energy Research Establishment; Calder Hall, the world's first nuclear power station; the works of the Steel Company of Wales, the Bristol Aeroplane Company at Filton, near Bristol; and industrial plants in the areas of Glasgow, Edinburgh, Manchester, Liverpool, Leeds and Belfast.

The Canadian Trade Mission arose out of the proposal made last summer by the Canadian Prime Minister, Mr. Diefenbaker, that some of Canada's imports from the United States be stopped and the trade transferred to Britain. Improvements in telephone services across the Atlantic and faster air transport facilities place the United Kingdom in a vastly improved position to offer rapid delivery of goods ordered and to provide satisfactory servicing on Canadian soil.

ENGINE PERFECTION: *Above*—Mr. Dorey, the general manager of Rolls-Royce Ltd., proudly shows a Bentley engine to Mr. Drew (centre), the Canadian High Commissioner, Mr. A. G. Bailey of Selburn-Bailey Gas and Oil, Mr. Ouimet and Mr. Clark, of Maritime Asphalt Products Ltd., during the Canadian Trade Mission visit to Rolls-Royce. *On right*—Mr. J. D. Pearson, the chief executive and deputy chairman of Rolls-Royce, explains to members of the Trade Mission features of the Rolls-Royce Dart engine.

towers of the world's first nuclear power station at Calder Hall, Cumberland, **experience gained by British firms in building Calder Hall and the other nuclear en[abled] them to offer complete stations for export and to provide consultants for [many] different countries developing their own programmes for the peaceful [use] of atomic energy.** Calder Hall is a dual-purpose plant. Opened by the Queen in [October] 1956, it was constructed primarily for the purpose of producing plutonium, [with] electricity as a by-product. But the experience gained has already been invaluable in the development of the United Kingdom's nuclear power programme. Heat at Calder Hall is obtained from two giant nuclear furnaces or reactors which replace the boilers of ordinary power stations. This heat is transferred by circulating carbon dioxide gas to four large cylinders filled by water tubes. The water is thus turned into steam which is used to drive conventional steam turbines. The Canadian Trade Mission spent a month visiting industrial centres in this country with a view to increasing British exports to Canada. The Mission was generally held to be an unqualified success.

A MODERN MILK PLANT: Mr. Brissendon, of the A.P.V. Company, Mr. Patterson, President of the Interprovincial Farm Union Council, Winnipeg, and Mr. Gibbins, Vice-President of the Wheat Pool, Regina, examine a 3,000-gallon pasteurisation plant at the Express Dairy plant, Morden Surrey. The plant is one of the largest and most up-to-date milk depots in the world.

WATCHING STEEL STRIP BEING ROLLED: At the Abbey Works of the Steel Company of Wales at Port Talbot, members of the Canadian Trade Mission to the United Kingdom watch steel strip being rolled from the 80-in. Continuous Hot-Strip Mill. The Steel Company of Wales was formed in 1947 and employs about 22,000 workers. It produces one-third of Britain's sheet steel and two-thirds of her tinplate. By 1960 £175,000,000 will have been spent by the Company on extending the plant and modernisation.

Canada's Trade Challenge to Britain

SUCCESS OF A MISSION: THE CANADIAN INITIATIVE

By "THE SPHERE" INDUSTRIAL CORRESPONDENT

IT is not easy to express, still less to analyse, the remarkable impact made on British business by the mission of Canadian industrialists—"these fifty-seven barnstorming crusaders," as Sir William Rootes called them—who came to Britain at the end of last year, and the way that their 1,500-mile trip round Britain's industrial centres turned into a triumphal progress. It certainly surprised the Board of Trade, and probably even Sir William's Dollar Exports Council.

Officialdom had made great efforts to arrange for them to meet a useful selection of potential British suppliers of the goods they might want. British businessmen were ready to give their visitors a cordial welcome and to show them all they liked to see. That is no more than routine courtesy with trade missions : it does not ensure their success. Indeed, some people in British industry have become slightly allergic or sceptical towards such missions through long and repeated practice of the routine. But somehow the Canadian visit became something entirely different. Over and over again one heard businessmen comment, "We 've never had a trade mission quite like this."

It was, perhaps, mainly a matter of quality in the men who came. These were not simply purchasing representatives concerned with specific items nor, on the other hand, glad-handers over merely to dispense vague goodwill. They were top executives and managers from Canadian companies prepared and anxious to buy British, but over here primarily to tell British industry about the potential market that Canada offers in general, and to urge Britain to get in there. They were tireless, enthusiastic, ready and qualified to judge what they saw, say what they liked, point out possible weaknesses. They certainly caught the imagination of British industrialists.

One might add that originally there had been a much simpler and more positive welcome within British industry for the Canadian idea of shifting another 15 per cent. of their country's trade to this country than had come in the first place from the British Government. Industrialists were less inclined to focus on the difficulties involved than some officials had been, and more ready to stress the opportunities offered.

Much of the original thinking behind that Canadian initiative had come not simply from politicians, but in the first place from Canadian industrialists—some of them men who came on this mission. For some time a group of industrialists centred round Mr. James Duncan had been propounding the idea of strengthening the trade link with Britain, which had become relatively attenuated since before the war. Our exports to Canada had indeed risen in volume, but to nothing like the extent that Canadian trade as a whole, and particularly with the United States, had grown. As a result, by 1956 only 8½ per cent. of Canada's imports came from Britain, compared with 18 per cent. in 1939.

In the twenty-six days of late November and early December that they spent here, this breezy and business-like band of commercial missionaries spared no effort to show British industrialists how they could raise the British share of Canadian trade back towards its former magnitude. Sped around the country in their special "Maple Leaf" train drawn by a gas turbine locomotive, in aircraft, and by road, they saw a wide range of what was on offer—from nuclear reactor designs at Harwell, Calder Hall and Berkeley to the world's best tradition in motor-cars at Crewe, where Rolls-Royce are making one model "whose performance and characteristics are particularly suitable for specialised parts of Canada." Visits to sixty factories in Britain, Scotland and Northern Ireland took them nearly three weeks, and during the final days of their tour they talked to "overflow" meetings at which nearly 1,000 British industrialists whose firms had not been covered in the tour attended to cross-examine them about how to approach the Canadian market.

The group had not, at the time this article was written, produced its full report, though this was said to be already in draft. When they left in mid-December the visitors had already some positive decisions to announce, many suggestions to offer—and a few admonitions. Local, provincial and national government purchasing in Canada, they were able to announce, was to be reviewed in the endeavour to replace as many imports from other countries as possible by British goods. The Dollar-Sterling Export Council would be strengthened, as would its promotion of buying British rather than other imports. Potential purchasers would be asked to invite inquiries sufficiently in advance to give British companies time to compete.

"British goods have two outstanding advantages in our market," observed Mr. Gordon Churchill, Canadian Minister of Trade and Commerce and leader of the mission. "The price is competitive with that of American imports, and the quality is generally recognised as being first class. Your disadvantages arise from several causes . . . the inexorable facts of geography and the buying habits formed during the war and the period of reconstruction which followed it . . . play the most important part." Most of Canada's population live within 200 miles of the American border, exposed to advertising and sales promotion from some of the most effective "mass communication media" in the world. He warned intending British exporters that styles which the rest of the Commonwealth would accept might just not do in Canada : this is a market of comparatively rich, discriminating consumers with a taste formed on American models and enough disposable income to indulge their taste on a generous scale.

On the frequently vexed questions of delivery periods and of keeping delivery promises, the mission bluntly asked that exports for Canada should be given priority. "They represent only 6 per cent. or so of your world exports and 2½-3 per cent. of your production : priority should not be too high a price to pay to overcome the greatest obstacle to development of your trade with us."

At the business level, invaluable contacts were made by British businessmen during the mission's stay. It is to be expected that many of them will be paying return visits to Canada this spring. At the official level, Sir David Eccles, President of the Board of Trade, has already toured Canada since the mission's return. A small but strong mission from the Dollar Exports Board is to go across this spring. Between the two Governments, there remain some broad issues of policy to be thrashed out. Over and above Mr. Diefenbaker's initiative, there is the British suggestion, never fully set out, of free trade, which remains to be discussed at the Commonwealth Economic Conference it is still proposed to hold in Ottawa this summer. To this British plan, the Liberals might be more favourable than the Conservatives.

This year, whichever Party forms the next Government, there will also arise the question of the Commonwealth's attitude, and Canada's attitude in particular, towards British participation in a free-trade area with Western Europe. Canada, itself of recent years inclined towards free-trade policies, is sympathetic in principle, but wary of any tendency for this to turn into a closed European trading area working towards independence of dollar supplies. Some form of eventual association with the free-trade area might well appeal to Canada, and to the rest of the Commonwealth, but they may need assurances that in the meantime their interests will not be prejudiced as a result of closer British participation in Europe.

AT THE BOARD OF TRADE, IN LONDON: Mr. K. McGregor (standing), an Under-Secretary to the Board of Trade, speaks at one of the meetings between members of the Mission and the Board of Trade. On each side of the speaker sit some of the fifty-seven members of the Mission.

INDUSTRIALISTS CONVERSE: In the Grand Council Room of the Federation of British Industries, Mr. I. F. McRae (right), vice-president of the Canadian General Electric Company, Toronto, speaks to Mr. A. H. Hird, Vickers Ltd., and Mr. J. M. Smith, Ford Motor Co. Ltd.

On left—

MEETING THE DOLLAR EXPORTS COUNCIL: Left to right : Sir Harry Pilkington; Mr. Gordon Churchill, Canadian Minister of Trade and Commerce; Sir William Rootes, chairman of the Dollar Exports Council; Mr. George Drew, Canadian High Commissioner, and Mr. J. S. Duncan, chairman of the Hydro-Electric Power Commission of Ontario.

TOURING BRITAIN

On left—

SAFETY HELMETS ARE WORN AT BERKELEY: Members of the Canadian Trade Mission wear Texelox protective helmets during their visit to the new atomic power station under construction at Berkeley, Gloucestershire. The helmets, widely used in the mining world, are made from tough high-compression laminated fabric, and ensure complete head protection while being light and comfortable to wear. Berkeley Nuclear Power Station is being built for the Central Electricity Authority by the A.E.I.—John Thompson Nuclear Energy Co. Ltd. The Canadian party was led by Mr. James Duncan, who is Chairman of the Ontario Hydro-Electric Power Commission, Toronto, and was received by Sir Edward Thompson, Chairman of John Thompson Ltd., and a director of A.E.I.—John Thompson. Members of the Mission showed considerable interest in the progress made at the site in the eleven months during which work had been under way at the Berkeley Nuclear Power Station.

LEO AT LYONS: At Cadby Hall, Mr. S. F. Dellow, of the Board of Trade, shows members of the Canadian Trade Mission LEO, the electronic brain installed for J. Lyons and Co. Ltd. The delegates are Mr. W. S. Perlin, managing director of I. F. Perlin Company, St. John's Falls, Newfoundland; Mr. Ross Jenkins, senior merchandise director, the T. Eaton Co. Ltd., of Toronto (Eaton's of Canada), and Mr. John Bonus, general manager of the British Trade Centre, Toronto. LEO is the product of Leo Electronic Computors Ltd., and can compute orders, invoices and salaries for the Lyons organisation, and other firms.

A GIANT PRESS: In the foreground are the dies of a 3,000-ton clearing press, as members of the Canadian Trade Mission watch the pressing of heavy parts for railway wagons being made at the Wolverhampton works of John Thompson Ltd.

On right—

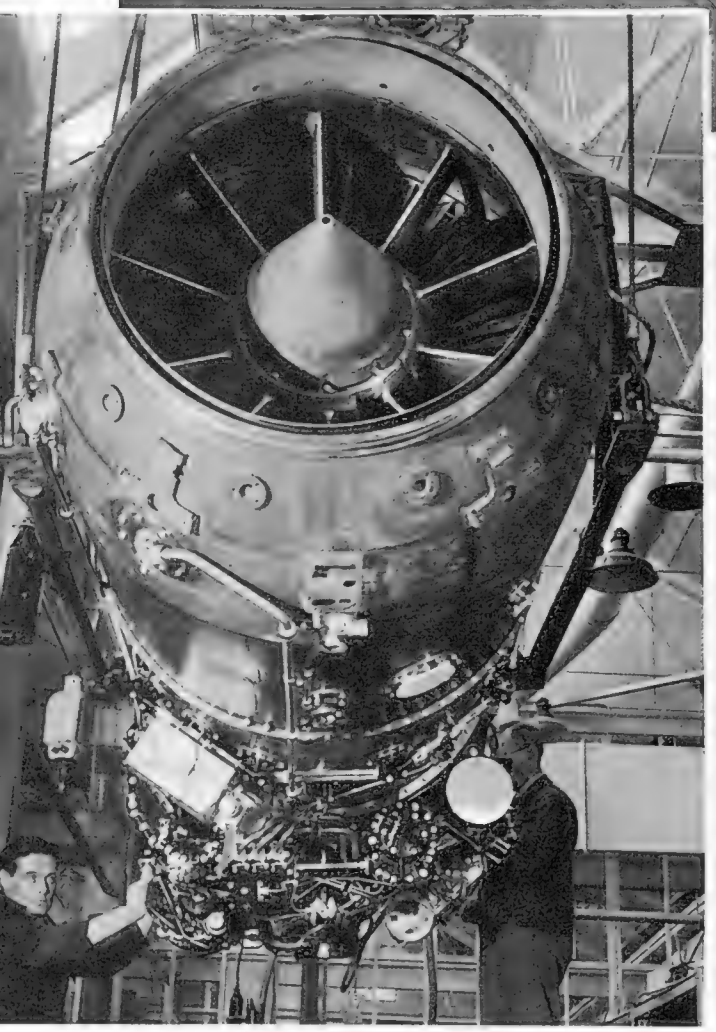
A CANADIAN MINISTER SEES THE THOR RAM JET: At the works of the Bristol Aeroplane Company at Filton, Bristol, the Hon. Gordon Churchill (centre), Canadian Minister of Trade and Commerce, and leader of the Canadian Trade Mission to the United Kingdom, is shown a Thor ram jet engine. With him are the managing director of the Bristol Aeroplane Company, Mr. Peter Masefield (left), and the assistant general manager at Filton works, Mr. G. L. Issott.

Canada's Trade Challenge to Britain

IN BRITAIN'S FACTORIES

VISCOUNTS FOR TRANS-CANADA AIR LINES

In the final assembly stages at the Vickers-Armstrongs works at Hurn, near Bournemouth, is this batch of Vickers Viscount 757 airliners for Trans-Canada Air Lines. The first fifteen Viscounts for TCA were delivered in February 1956. This airline is the first and most experienced North American operator of the aircraft. To-date thirty-five aircraft in a total of fifty-one have been delivered. Capitol Air Lines, in the United States, have ordered sixty Viscounts, and apart from those used by smaller airlines there are a number of executive Viscount airliners in use there for private companies and individuals.

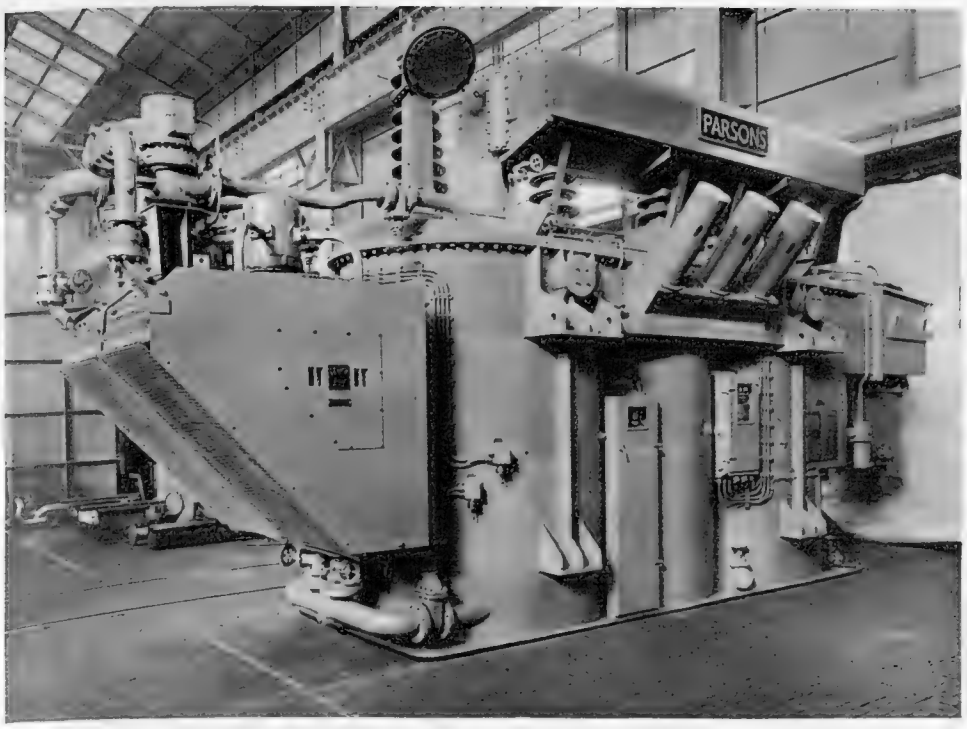


POWERED BY ROLLS-ROYCE

Fitters complete the final details of a production Conway by-pass aero engine at the Rolls-Royce factory at Derby. The engine is of the type which will power the Handley Page Victor B Mark 2 bombers ordered for the Royal Air Force, and gives 17,250 lb. thrust. A version of the Conway has been developed for civil aviation, and is the most powerful civil aero engine yet announced, with a thrust of 16,500 lb. It has been chosen for the Douglas DC-8 jet airliners to be operated by Trans-Canada Air Lines, and by Air India International, British Overseas Airways Corporation, Lufthansa and Varig for their Boeing 707-420 airliners. The Vickers VC-10, for which BOAC signed a contract last month, will be Conway-powered.

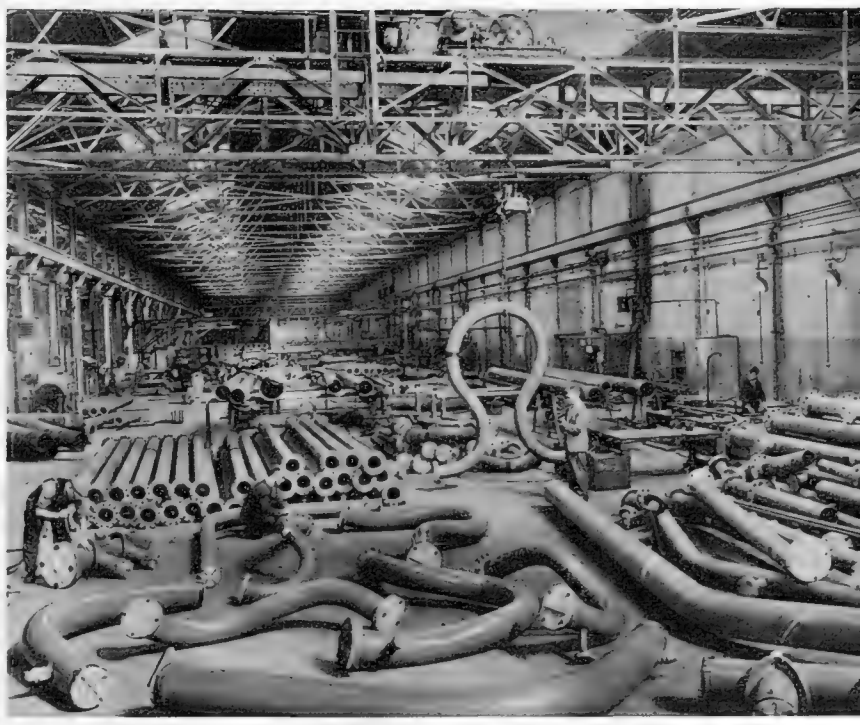
DE HAVILLAND COMETS UNDER CONSTRUCTION

Five Comet fuselages are here seen on their tracks in the fuselage assembly shop at the works of the de Havilland Aircraft Company at Hatfield, Herts. They are part of a consignment of nineteen Comet Mark IVs now under construction for the British Overseas Airways Corporation. The first aircraft to be completed was rolled out of the assembly shop just over a week ago. It will be delivered to BOAC towards the middle of the year, and Comet IV airline services will begin early in 1959. The Royal Canadian Air Force took delivery last year of two Comet 1As. These aircraft, fully pressurised for flying at heights up to 45,000 ft., are used by Canadian Air Transport Command as high-speed transports both for V.I.P.s and supplies. These Comets have made many trans-atlantic flights, some of which have been accomplished in a flying time of considerably less than five hours.



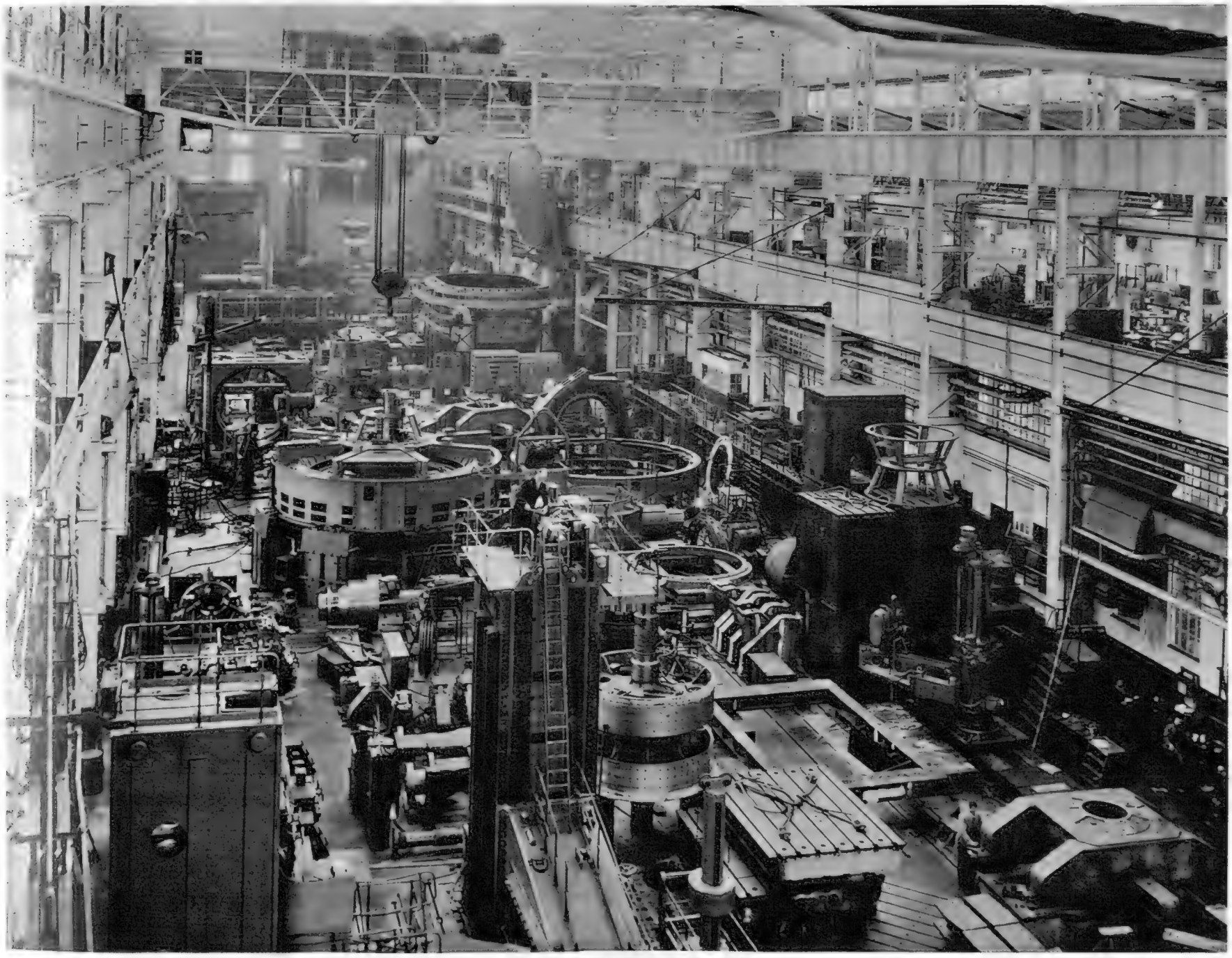
A FULLY TRANSPORTABLE TRANSFORMER

This 45-MVA. 132/33 kV. three-phase transformer, which has been built by C. A. Parsons and Co. Ltd., of Newcastle-on-Tyne, is so designed that it can be moved by road or rail with the minimum of delay from site to site as the occasion demands. This company has built several large turbo-generators for use in Canada. The Ontario Hydro-electric Power Commission has ordered four 200-mW. cross-coupled turbo-generators for the Hearn station, and two 300-mW. turbo-generators for the Lakeview station. The latter are the largest machines ever bought by a Canadian utility.



HIGH-PRESSURE PIPEWORK

At the Tollcross works of Stewarts and Lloyds Ltd., lengths of manipulated high-pressure pipework are prepared for dispatch after assembly and inspection. The company is responsible for a large quantity of exports of tubes of all kinds to Canada. The most prominent feature in their wide range of products is oil pipelines. An example of Stewarts and Lloyds' Canadian enterprise is the building of the natural-gas pipeline from Edmonton, Alberta.



BRITISH THOMSON-HOUSTON'S PART IN DEVELOPING CANADA

This general view of the Rugby works of the British Thomson-Houston Co. Ltd., shows the Heavy Plant Factory for the manufacture of large rotating machines and transformers.

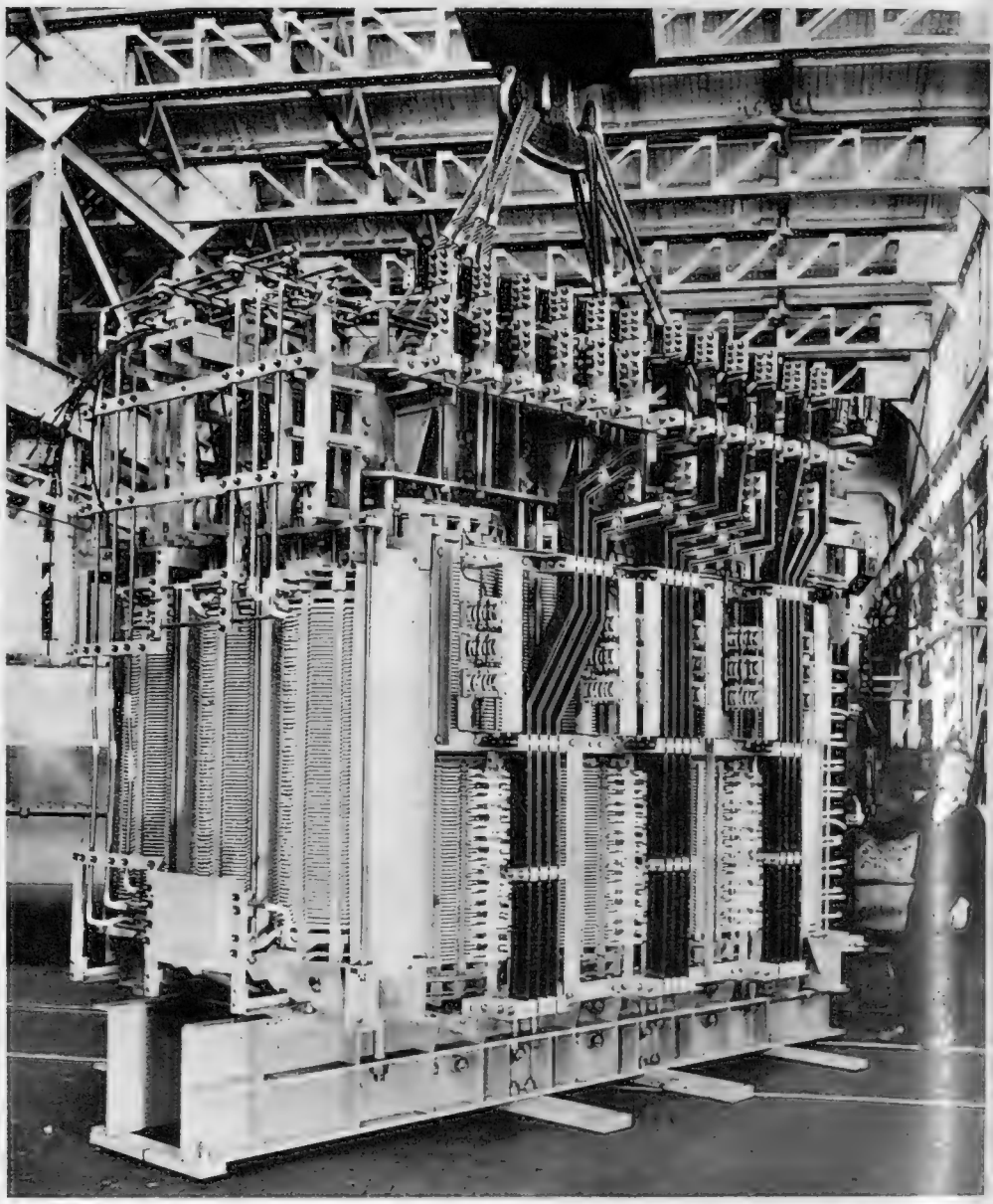
The company is responsible for a considerable number of exports of electrical machinery and equipment to Canada, but by far the most important project with which it is at present connected is the Wenner-Gren B.C. Development Company's plan to dam the Peace River and develop British Columbia. This is the largest hydro-electric project in the world, and will yield an estimated 4,000,000 h.p. when it is carried out. The Grand Coulee Dam, the largest in the United States, yields only half that.

The Wenner-Gren Company last year concluded an agreement with the British Columbia Government to survey the mining, power, forestry, communications and transport facilities over a 40,000-square-mile area of northern B.C. The hydro-electric scheme, prepared by engineers of British Thomson-Houston, is the first result of the survey. It plans to harness a river system just west of the main peaks of the Rocky Mountains. The dam across the Peace River will form an enormous lake 260 miles long and 12 miles wide.

Among the striking effects that the scheme will have on Canada's economy are hydro-electric power for Alberta, all-the-year-round navigation of the Mackenzie River and the opening up of central British Columbia. The province is Canada's largest producer of lead and zinc, and also the only source of tungsten, antimony and tin.

Canada's Trade Challenge to Britain

EXPANDING EXPORTS ACROSS THE ATLANTIC



A TALL BUILDING AND A LARGE TRANSFORMER: *Left*—The unusual shape of the 285-ft.-high headquarters building of the B.C. Electric Company in Vancouver is the result of efficient use of space and the latest techniques of skyscraper construction using modern materials, including reinforced concrete. The general contractors were John Laing and Son (Canada) Ltd. *Right*—A technician inspects one of the sixteen transformers rated for a rectifier output of 12,100 kw., 850 volts D.C., supplied by the British Thomson-Houston Co. Ltd. to the Canadian British Aluminium Co. Ltd. These transformers are probably the largest in the world for rectifier purposes.

BAIE COMEAU, a small industrial town of about 7,000 inhabitants, is situated on the northern shore of the lower St. Lawrence River in Quebec. Twenty years ago there was hardly any permanent community there at all—only a few transient lumbermen, fishermen and hunters. The town, which by Canadian standards of sparse population is not very small, grew up after the Quebec North Shore Paper Company erected a newsprint mill there in the mid-'30's. During the summer of 1955 this Canadian company and British Aluminium Ltd. began to discuss the possibility of forming a joint company to lay down an aluminium smelting plant there, to use hydro-electric power from the Manicouagan Power Company's station at McCormick Dam, eleven miles away.

The planning went on that winter and site levelling began in May 1956, as soon as weather conditions allowed. Two days before last Christmas, less than twenty months after the site began to be cleared, the smelter poured its first aluminium ingots. This was the first of four stages of a £50,000,000 plant. It had entailed building access roads, a wharf capable of berthing three 10,000-ton ships, a 3,000-ft. belt conveyer system to move materials from the dock to the smelter and two furnace bays, each a third of a mile long. In addition, three blocks of apartments and over 200 houses were built for the joint company's employees.

The job, like the Company, was partly Canadian and partly British. The rectifiers came from British Thomson-Houston, the transformers from English Electric, the cranes from Herbert Morris and Company and Babcock and Wilcox, and structural steel from Redpath Brown, of Glasgow. MacAlpines built the wharf, and aluminium in sheet and other forms was supplied by British Aluminium itself from its mills in this country. Much of the cement used came from Britain. A number of Scottish technicians from British Aluminium's Highland Reduction Works have gone over to join the staff of the new works.

Heavy electrical and mechanical equipment, steel, know-how and capital—the things Britain has supplied completely on time to Baie Comeau—are a pretty good example of the things that Canada hopes to get more of from Britain in future. The Canadian Trade Mission two months ago brought no detailed shopping list for British goods; but that was not its job. Canada is a country with no prejudices against imported goods, and right across the whole range of consumer and capital goods this is a ready market, provided British goods are right in design and price, though some have to surmount quite substantial tariff fences. Nevertheless, there is little doubt that in the rapid long-term expansion which can confidently be expected for the country, the main emphasis of demand for imported goods will be on investment goods—machinery, heavy plant, constructional materials, vehicles, and the advanced equipment that at present only highly developed industrial countries such as the United States, Britain and Germany can offer. Such metal goods, plus primary textiles and chemicals, bulk large in Canadian imports, being bought mainly by Canada's own industries.

The most rapidly expanding of these, recently, have been the producers of primary industrial materials such as metals, pulp and paper, and now oil, which are in no sense competitors with British suppliers, but massive potential customers. As a result, the expansion of Canadian industrial capacity since the war has not at all reduced the country's demand for imported goods, though here and there it has altered the pattern of demand for them. The vast increase in people's purchasing power and in industry's equipment needs has meant that imports have risen in line with the general growth of the economy—though the rise was, until very recently, mainly in purchases from the United States, and Britain's share of this market has dwindled depressingly.

Economic development means rising energy requirements—and one of the biggest export chances British industry is offered in Canada is in the development of Canadian electric power. Here, leading British manufacturers are well established in the field. Canadian power is mainly hydro-electric. Metropolitan-Vickers is supplying turbo-alternators to the British Columbia Electric Company, English Electric recently obtained a new contract for water-turbine generators and transformers for a Columbia river project, and C. A. Parsons is working on two 300,000 kilowatt turbo-alternators to the Ontario Hydro-Electric Board. But some of the power comes from thermal stations. Since the Canadian Mission returned in December, Balfour Beatty and Company have been appointed consultants to co-ordinate design and construction of a new project near Vancouver that will be one of the biggest thermal stations in the world. Canada itself has a well-equipped and versatile electrical manufacturing industry; but it does not make certain of the biggest key generating equipment.

In a country of this vast size, with new areas continually being opened up for development, there is a big demand for transport and communication equipment. Heavy road-making equipment is one of the things that were mentioned by the Trade Mission as offering British manufacturers special opportunities. This is a market in which a good deal of the world's best equipment is American, and one in which the nearness of Canada's vast industrial neighbour gives it obvious advantages. Nevertheless, Canadian public authorities are anxious to buy British, and some British makers of heavy earth-moving equipment, such as Vickers, are establishing parts and service depots in British Columbia. There are few countries that can excel Canada itself in the building of the light aircraft that form so vital a link in the communications of the country's North; but in the building of the bigger airliners they generally buy from America or Britain, and Trans-Canada Airlines now operates most of its internal air services with Vickers Viscounts.

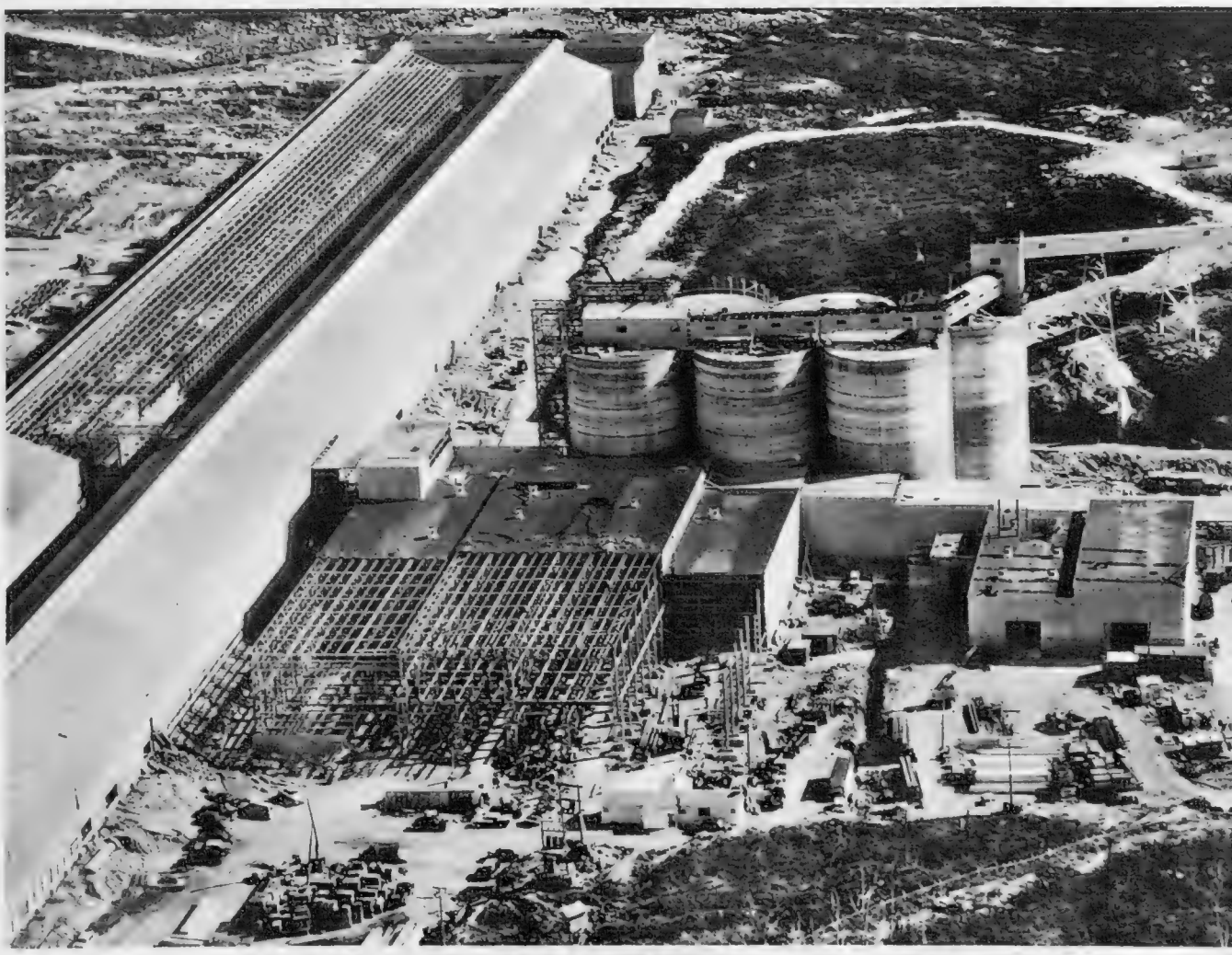
"Oil country goods" are items that Canada has only needed since the war—and which, incidentally, Britain has only begun to make in large quantities since the war. Alberta is one of the most recently developed major oil-producing areas of the world. As such, it is vulnerable to fluctuations in oil demand, and has recently been affected by slackening in world requirements, by American restrictions on oil imports and by Canadian restrictions in natural gas exports. Nevertheless, no one doubts that this is merely a short pause in its fantastic rate of growth; and British makers of petroleum equipment, who sent a good-will mission to investigate the market there last spring, have great opportunities.

ONTARIO HYDRO'S NIAGARA RIVER GENERATING STATIONS: At Ontario Hydro's two Sir Adam Bec-Niagara Generating Stations on the Niagara River, a major installation is six new-type reversible pump turbines using the Deriaz wheel. These 45,000-52,000 h.p. turbines are being supplied by English Electric and their Canadian Associates, John Inglis, of Toronto. The number one station (output 392 megawatts), which at one time was the largest hydro-electric development in existence, is on the far right. Next to it is the number two station which, when completed, will have, with the number one plant and pumping-generating station, an installed capacity of 1,762 megawatts.

Proper investigation of the American market is a pre-requisite of successful trading in this country, which is so closely linked and sympathetic to Britain and yet in important ways so unlike it. Failure to do so, and to appreciate the difference of Canadian requirements, are the things most Canadian importers complain about—along with lengthy delivery dates and sometimes with failure to meet even those delivery promises. In this respect, however, matters have recently been improving. Few importers complain of the quality of British goods, or of their price, but sometimes design reflects this sheer lack of knowledge of Canadian conditions.

It was often said by members of the Mission in Britain last November that it was no use going into the Canadian market unless one was prepared to stay there for five years or so. Capital equipment takes periods of years to build and deliver, in many cases, and continuing spares or replacement are essential, so British firms building machinery and equipment are generally more ready to establish themselves on the spot than makers of consumer goods have been so far. It is true, also, that in everyday purchases the demands of the Canadian consumer differ more sharply from what Britain can sell elsewhere; this can be a more difficult and chancy market to penetrate. On the other hand, some of the selection and market research can be done for the British maker. The Canadian department stores have expert buyers in Britain on the look-out for what may tickle their customers' taste. And in certain ranges of luxury goods or high quality clothing, for example, rich rewards await the enterprising British maker.

There are not many fields in which Canada does not make a proportion of the goods in demand herself, and British makers cannot afford to underestimate this efficient competition. On balance, in industries where international comparisons are practicable, the output per worker in Canadian factories often exceeds British—and its coverage is steadily expanding. Many British firms have opened manufacturing or assembly subsidiaries there, and they are eagerly welcomed. Moreover, assembly or partial manufacture on the spot may well increase rather than reduce a firm's exports from Britain, since it can gain a better idea and a bigger share of the market. Nevertheless, Canada is a nation with much higher wages and a generally higher standard of living than Britain. Given free trade, or even the present degree of protection and quotas, plus Canadian desire to switch over towards Britain, there are abounding opportunities for the British exporter.



THE FIRST PRODUCTION OF ALUMINIUM INGOT AT A NEW CANADIAN SMELTER: A general view of the new aluminium smelter of the Canadian British Aluminium Company at Baie Comeau, in the Province of Quebec on the north shore of the St. Lawrence River, 400 miles north-east of Montreal. In the foreground the ancillary buildings are still under construction. Immediately behind them are the alumina silos. Less than twenty months after work started on clearing the site, the first metal was poured at the smelter. One of Britain's most important investments in Canada in recent years, the Company is a subsidiary of the British Aluminium Co. Ltd., and has been formed in partnership with one of Canada's largest pulp and paper companies, the Quebec North Shore Paper Company.

Canada's Trade Challenge to Britain

A STEEL-PRODUCING CENTRE IN WALES

A view of part of the interior of the Broadside Mill at the Abbey Works of the Steel Company of Wales Ltd., which was visited by members of the Canadian Trade Mission. One of the most outstanding examples of Britain's post-war industrial developments is the project put in hand by the company to modernise the sheet steel and tinplate industries of South Wales. The developments have been carried out in three main stages. As a resu the sheet and tinplate industries of Wales face the future confide that, as the demands for these products increases, Britain will hav production and technical capacity for the manufactu of plat sheet and tinplate which in quality can compare favourably wit similar products manufactured anywhere else in the world.

EXPANDING STEEL PRODUCTION

On left—

STEEL EXPORTS TO CANADA

A workman guides one of the enormou hollow forged stainless steel rolls for us in a Canadian paper-making plant.

Despite keen competition from the Unite States, substantial quantities of Sheffield-mad steel continue to play a key role in Canada rapidly expanding industrial developmen Supplies of stainless, heat and corrosio resisting steels are particularly important, no only for Canada's thriving aircraft industr but also for such purposes as paper-makin plants, medical, chemical, dairy and minin equipment and the manufacture of a wid range of domestic utensils.

Much of the stainless steel used in Canad is supplied by Firth-Vickers Stainless Steel Ltd., of Sheffield, a company which produce only these special steels and is the large concern of its kind in Europe. Firth-Vicker one of the largest suppliers of these steels t all parts of the Commonwealth, has exporte them to Canada for many years. The growt of Firth-Vickers trade with Canada can b attributed largely to the proved quality of th company's products. Canadian buyers insi above all on a high degree of quality, an the "Staybrite" and other Firth-Vickers steel used in Canada for many years, have provide adequate proof of their ability to meet th high standard required of them.

TIN[illegible]ATE–MAKING AT A MAJOR WORKS IN MONMOUTHSHIRE

A view taken inside the Hot Strip Mill at the Ebbw Vale works, in Monmouthshire, of Richard Thomas and Baldwins Ltd., shows the strip passing through the roughing stands and entering the finishing stands which are seen in the distance. The strip is coiled and is later cold reduced and processed for sale as steel sheet or tinplate. The process of producing tinplate, from the raw material to the finished product, is one of the activities carried out on this vast site in Monmouthshire. Referring to the method of production in THE SPHERE of January 11, the Industrial Correspondent said: "Another way of making tinplate begins with coils of hot-rolled steel strip from an integrated strip mill such as Ebbw Vale or Margam, in South Wales. The coil of strip is rolled out again through another five-stand 'cold' reduction mill, before being passed through cleaning and annealing processes. The steel sheet runs on through a 'tinning' line of tanks in which a coating of tin is automatically deposited on it by an electrolytic process. As it runs on continuously the tinned surface is heated, quenched, sprayed and dried before shearing and packing."

On left—

WHERE SHIPS ARE BUILT

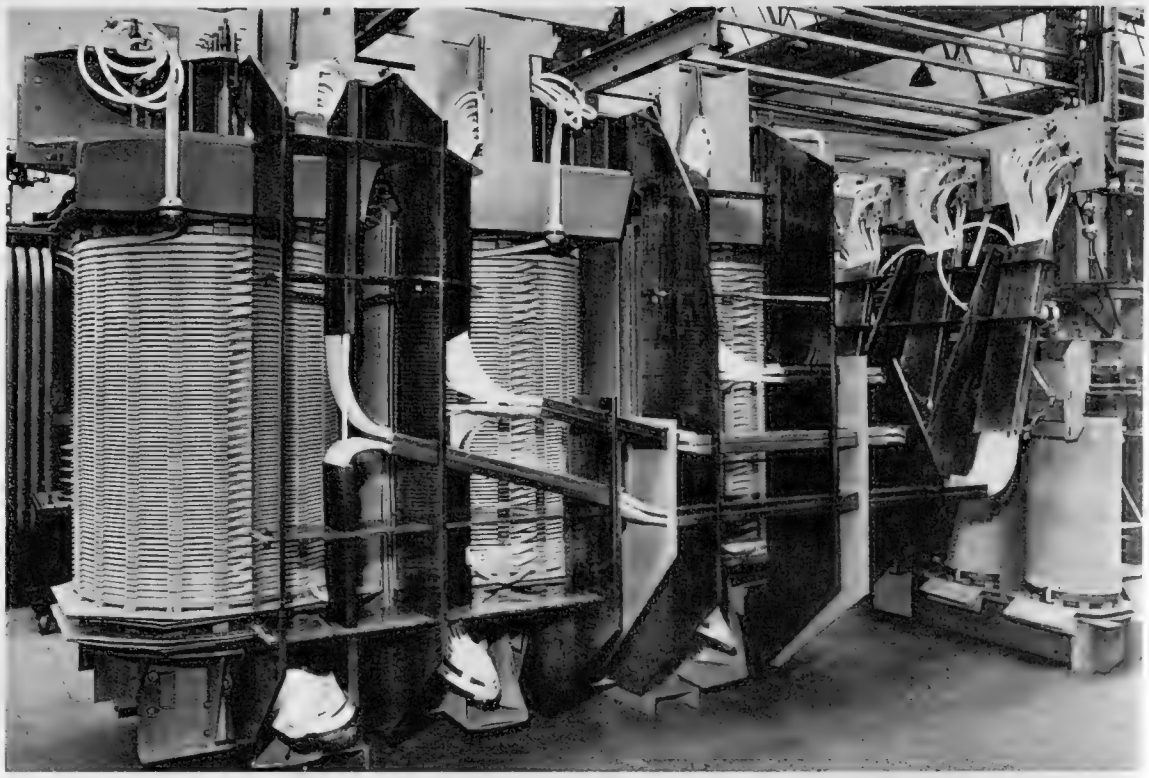
The naval yard at Newcastle upon Tyne, which is operated by Vickers-Armstrongs (Shipbuilders) Ltd, will be busier than usual at the end of the year when work starts on the construction of a new *Empress* liner to be built on berth number two, which is second from the left. Plans have been made to lay the keel following the launching of a 36,000-ton tanker for the Esso Petroleum Co. Ltd., scheduled to take place sometime towards the end of December. The new vessel will take shape on the same berth that the *Empress of England* was built. This luxury liner is the latest addition to the Canadian Pacific Fleet.

CANADA LOOKS ACROSS THE ATLANTIC

TWO or three years ago a Canadian banker travelled south to address a gathering of bankers and financial experts in Washington. When the time came for him to speak he cleared his throat and began : " Gentlemen, unaccustomed as I am to speaking in a soft currency country. . . ." His audience gasped, then guffawed. Americans have the habit, and not without reason, of thinking that the very term " hard currency " was invented to define their own dollar, as the soundest and most desirable of all international currencies in the dollar-short post-war world. Yet they had to acknowledge the fairness of their guest's gentle gibe.

In 1950, Canada had freed its currency from any fixed rate of parity, allowing it to find its level on the foreign exchanges. By 1952, the Canadian dollar had passed the level of parity with the American, and almost ever since it has been worth a few cents more than its American counterpart. As the banker spoke, American tourists were encountering the same kind of friendly mockery. Arriving in resort hotels north of their border, they were being nettled by polite intimations that " as a special favour to their American visitors " the hoteliers would forget that few cents difference, and take American dollars for bills " as if they were as valuable as Canadian."

To an Englishman travelling in North America at the time, politely teasing exchanges of this sort seemed significant in more than one way. The basic reality represented by that " premium " on the Canadian dollar, albeit indirectly, was that the world's most prosperous economy was being made conscious that its younger, less populated northern neighbour was now expanding at a rate far greater than itself—a rate of economic development unequalled in the Western world. That expansion, nobody doubted, owed much to the United States—to its prodigiously growing demand for imports of just the basic industrial materials Canada could supply, to the capital its businessmen were prepared to invest in Canadian enterprises promoting and participating in expansion, to American technical equipment and know-how. But to owe a country a lot does not necessarily make the debtor enjoy the relationship, as Britain learned long ago and the United States is now learning throughout the world. Ties between the two nations of North America will always be close, but of recent years Canada, flexing the thews of its own vast new-found economic strength, has been slightly irked by what seem to be tightening bonds of dependence upon the United States.



TRANSFORMERS FOR CANADA: Since fifteen large transformers were supplied to the Toronto Electric Commissioners about three years ago, the Witton Engineering Works of the General Electric Co. Ltd. have been engaged on the production of similar units for other parts of Canada. A transformer recently completed for the Saskatchewan Power Corporation (seen above in the course of manufacture) incorporates the automatic fan-cooling system for heavy-duty periods which has proved successful in the Toronto transformers. The fans circulate air through the normal oil-cooling radiators and are controlled by switches in the temperature-indicating apparatus. A second transformer of similar design is now under construction for the same corporation. The maximum power ratings of these two transformers are approximately 30,000 and 40,000 kilowatts

BRITAIN'S EXPORTS OF NYLON ARTICLES TO CANADA: Part of the drying section of a Kemsley No. 5 paper-making machine, owned by The Bowater Paper Corporation Ltd., is being operated at a mill near Sittingbourne, in Kent. The webb of paper is passing round one of the large steam-heated drying cylinders. The machine is the largest of its kind in the world. Papermakers' felts containing nylon, which carry the wet sheet through the drying cylinders, last considerably longer than felts made from traditional materials. Several leading British manufacturers use considerable quantities of nylon in these felts, many of which are exported to countries all over the world. Canada is an important market. British know-how in producing felts is far ahead of that of the rest of the world. The inclusion of nylon increases the life of the felt and often improves its performance. In one Canadian newsprint mill a felt containing nylon lasts 137 days instead of the 65 days obtained with a natural fibre felt. This means a reduction of 25 per cent. in the felt cost per ton of paper.

That resentment has been to some extent crystallised politically, around the Conservative Party that last year overthrew the latest of the Liberal administrations that had ruled Canada for a generation. Certainly the highly effective political campaign that made Mr. Diefenbaker Prime Minister last June placed a good deal of emphasis on this theme—particularly on its aspect of " American penetration " into ownership of Canadian enterprise. It threw the Liberals, as a Government and now in Opposition, on to the defensive regarding this " American share," which, as they were entitled to point out, had contributed so powerfully to Canada's post-war prosperity.

Acknowledging that contribution, and regardless of politics, many Canadian citizens had been, and are, somewhat disturbed about the degree of foreign, and primarily American, ownership of their enterprise: and its proportions certainly are very substantial. About 60 per cent. of Canada's ten-year-old petroleum industry is owned abroad, and 70 per cent. controlled from abroad: for mining the comparable figures are 59 and 55 per cent. respectively: for manufacturing 44 per cent. foreign ownership and 46 per cent. foreign control. Foreign control over the country's rapidly growing " resource industries," in particular, was arousing some general disquiet.

It was upon the basis of this public wariness about economic dependence for capital on Canada's great good neighbour that the new Diefenbaker administration launched its proposals. They were not merely for some narrow programme of " Canadianisation " behind new protective restrictions, as the Liberals had forecast, but for a sizeable shift in the country's trading relationships from America and towards Britain, an even older trading partner and supplier of capital.

Since the Diefenbaker initiative, proposing co-operation between Canada and Britain to transfer eventually 15 per cent. of Canadian trade from the United States to ourselves, economic conditions across the Atlantic have somewhat altered. They have altered so as to make such a transfer of trade seem perhaps even more desirable to Canadians than before. But economic conditions to-day also emphasise the difficulties that the Liberals had already pointed out. For the embarrassments attached to economic dependence upon the United States have temporarily and partly shifted from the sphere of ownership of Canadian enterprise towards the current trading connections of the two countries.

It has sometimes been said that in economic terms when America sneezes Europe catches a cold. It might be added that Canada gets a mild bout of bronchitis. Roughly 60 per cent. of all Canada's exports have recently been going to the United States. It is overwhelmingly the largest foreign market for Canadian newsprint, woodpulp, lumber, nickel, copper, aluminium, zinc, and iron ore, and recently for uranium and oil. It should be added that massive development of these resources has been the main element in Canada's recent economic growth and moreover that the United States buys many of these materials to supplement its own considerable indigenous resources, not as its sole source of supply. When a recession begins to appear in the United States, as it did late last summer, it is these supplementary supplies from abroad that tend to be cut first as American production slows down. To some degree, correspondingly, investment in such Canadian industries loses part of its attraction for investors in the United States, so the steady influx of capital from abroad falls. And Canadians fear that American " branch plants " in their country may be the first in which production is suspended if directors in the United States are forced to shut down somewhere.

The moderate degree of recession that has so far developed in the United States, therefore, has already borne more heavily on some industries and areas in Canada, where employment, particularly in winter, often tends to be concentrated on particular industries or even factories in a given locality. Accordingly, it has given Canadians extra reasons to desire rather more insulation than their economy now enjoys from the fluctuating fortunes of the huge economy on the other side of the border.

It has not made that insulation—in the shape of bigger trade with Britain—any easier to achieve at present (except in so far as unchanged trade with Britain within a lower total volume would represent " a larger proportion "). For the sharp fall in Canadian exports resulting from cuts in American buying has left Canada able to afford fewer imports in total—which is not the easiest time for a band of British salesmen to start digging themselves into the Canadian market. Nor can it be said that this is the obvious time to get a favourable response from Canadian industrialists to the British suggestion of free trade, which would mean abandoning, *vis-à-vis* Britain, the protection behind which they have built up their present levels of business.

Nevertheless, Mr. Diefenbaker's confidence of public support for his whole policy, including this proposal of boosting trade with Britain, is demonstrated by his decision to seek an early election. On the other side, Liberal scepticism is directed towards the practicability of the idea, not its general desirability. And Canadian desire to strengthen the traditional trading bond once again represents a huge opportunity for Britain.

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Canada's Trade Challenge to Britain

TWO STAGES IN THE CONSTRUCTION OF A PREFABRICATED TRAWLER: *Left*—A section of deck and hatch girder is secured in place in the yard of Brooke Marine, of Lowestoft. *Right*—The bow section is fitted to an Arctic trawler, one of the order for twenty for the Soviet Union which this firm of shipbuilders and engineers is building in its yard on the Suffolk coast.

PART OF A SHIPBUILDING OPERATION WHICH IS CARRIED OUT WITH GREAT SPEED AND EFFICIENCY: A wheelhouse assembly is lowered on to the deck of the trawler. The Brooke Marine yard is so planned that it is able to complete a vessel in a remarkably short time. Present production of the 190-ft. trawlers results in a launching rate of one a month.

PREFABRICATED SHIPS FROM A BRITISH YARD

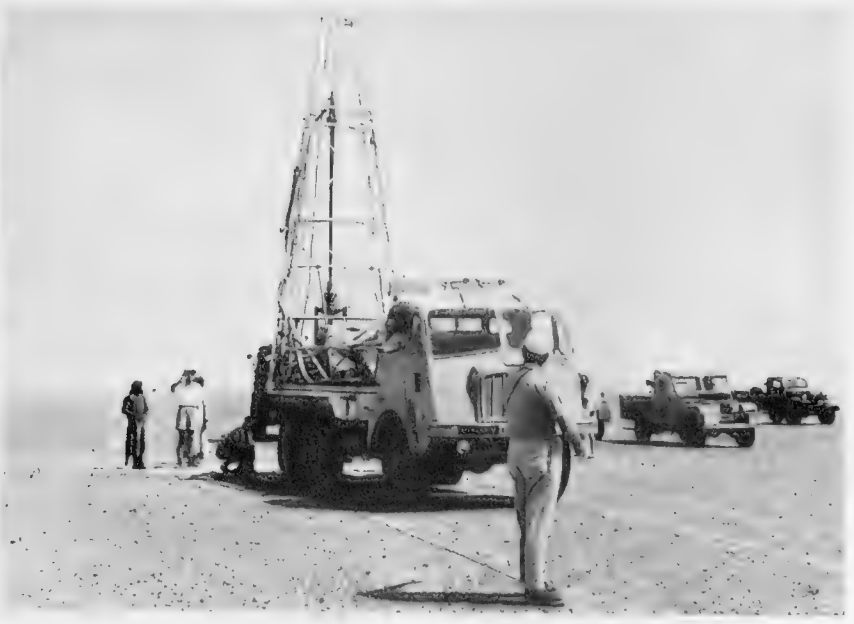
Prefabrication in shipbuilding is now an accepted principle and an example of this application in Britain is to be seen in the yards of Brooke Marine Ltd., of Lowestoft. The firm two years ago secured an order worth £7,500,000 from the U.S.S.R. for twenty Arctic trawlers. At the present time the 190-ft. vessels are being launched at the rate of one a month. This in itself is plain evidence of the speed and efficiency of the builders. Their new yard was opened in 1955. It is most carefully planned on up-to-date lines with a layout to give the best possible working conditions and a production flow as in a factory. The minimum time is employed in each process of construction and assembly. The raw materials arrive at one end and at the other soon appears the finished ship. An important section of the works at Lowestoft is one which deals with the various types of marine engines required to power the prefabricated vessels built there.

The trawlers are only one aspect of Brooke Marine's work with prefabrication. Another example is the three 140-ft. self-propelled hopper barges for Brisbane harbour in Queensland. They made the entire voyage to Australia under their own power. There are also the two passenger-cargo motor vessels destined for the Associated Humber Lines' Hull–Rotterdam service. The launch of the first, M.V. *Bolton Abbey*, established a local record. With an overall length of 303 ft. she is the largest vessel ever launched at Lowestoft. The local port conditions limit the size of Brooke Marine ships to 400 ft. maximum length overall, because of the narrowness and depth between piers of the swing bridge at Lowestoft, which carries the main Yarmouth–Ipswich road across the river outlet to the sea. With this proviso the firm can turn out a great variety of craft, to face the rigours of northern oceans or of tropical climates, to sail on the deep seas or on coastal and inland waters and lakes.

ON SEA TRIALS: The trawler sails out from Lowestoft to show her paces. The yard there produces a variety of prefabricated vessels. They are suitable for many purposes on many kinds of waters, from the deep sea to coastal and inland navigation and lakes.

A RECORD OCCASION: The passenger-cargo M.V. *Bolton Abbey* is seen shortly before her launch. She is the largest ship ever to leave the Lowestoft stocks. With a sister ship, now being built in the same yard, she will sail on the Hull-Rotterdam service.

Canada's Trade Challenge to Britain



PROVING THEIR STABILITY ALL OVER THE WORLD

Vehicles built by John I. Thornycroft and Co., Ltd., have become famous the world over, providing a high standard of reliable and economical transport which is difficult to exceed. The two illustrations above show Thornycroft transport at work both on and off the highway. *On the left* a Big Ben 11 cub. yard dump truck is being operated by Edward Vaughan Estates Ltd., Nairobi. The vehicle is fitted with a Tele-hoist all-steel tipping body and a link-type tipping gear. *On the right* a Nubian 6 by 6 oil-field truck, equipped with a drilling rig, is being used on geophysical research in the Persian Gulf.

The Thornycroft policy of designing and manufacturing specialised chassis to customers' requirements is of particular interest to the Canadian market, where heavy duty trucks are needed for such work as logging, mining, oil research and fire precaution duties with the Canadian Air Force and the Civil Aviation Authorities.

In connection with the last, a substantial order is in hand for a number of Thornycroft Nubian cross-country six - wheeled - drive fire crash tenders fitted with Rolls-Royce 8-cylinder petrol engines and Pyrene foam and water fire-fighting appliances. In addition to their exceptional cross-country performance over soft or unmade ground, the crash tenders have a top speed approaching 65 m.p.h. on hard roads or tracks. By means of a special drive from the chassis gear-box, discharge of foam and water can be made while the machine is in motion, either in the forward gears or, if required, in reverse.

A MAJOR DEVELOPMENT SCHEME

At this site on the Upper Campbell River, in British Columbia, where work is in hand for a dam and hydro-electric scheme, the Cementation Co. (Canada) Ltd. are carrying out drilling and grouting to form a curtain under the dam and in the area of the spillway and power station. Pressure grouting and shaft sinking are among the specialist services which the Company carry out in Canada.

VICKERS IN CANADA

A Vickers Vigor and Vickers Onions 11-15 Scraper are *above* at work on a road for the Municipal District of Rocky View, near Calgary, Alberta. The Municipal District purchased two tractors and a scraper in the spring of 1956 and the following spring obtained another tractor and two scrapers. The officials are " delighted with the performance of all this equipment " and are recommending it very highly to other municipal districts throughout the Province. A new company—Vickers-Armstrongs (Tractors) Canada Ltd.—has been formed recently, with its Registered Office at the Offices of Canadian Vickers Ltd., Montreal. It is the Canadian subsidiary of Vickers-Armstrongs (Tractors) Ltd., England. Vickers-Armstrongs (Tractors) Canada Ltd. has already assumed control of the existing Vickers Tractor depot in Vancouver and will shortly open a second depot in Toronto. The Vancouver depot will service territories to the west of Ontario, while the Toronto depot will serve those to the east. This means that Canadian dealers—as well as users—are now assured of quick, " off-the-shelf " service at all times.

On right—

CANADIAN "APARTMENTS"

Built by Taylor Woodrow (Canada) Ltd. these three fourteen-storey blocks of " apartments "—the biggest project of its kind privately undertaken in Canada—loom impressively over an island site in Toronto, where forty-nine buildings were demolished to make room for the scheme. It fulfils a long-standing need for well-situated homes within easy reach of the business heart of the city. Altogether, the three blocks comprise 774 separate apartments. There are two underground garages which accommodate between them 568 cars. Each block, 180 ft. in height, is built of reinforced concrete, including all load bearing walls.

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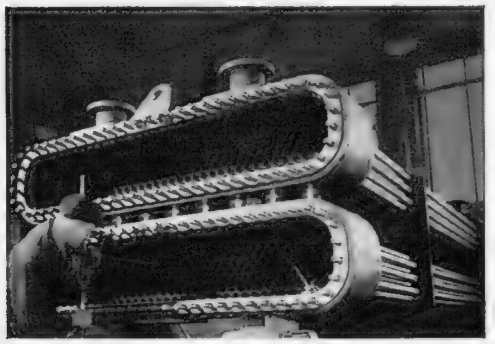

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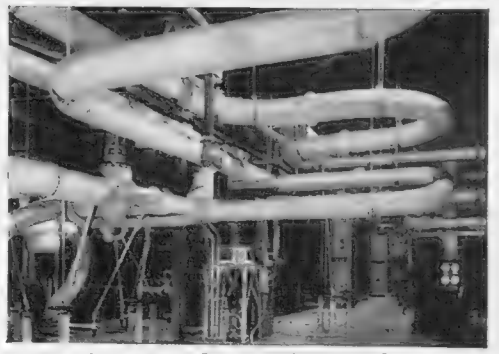

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TRAFFIC IMPROVEMENTS IN BRUSSELS

The Capital of Belgium Shows Initiative and Imagination in Preparing for this Year's International Exhibition

DIVERSION OF TRAMS FROM THE MAIN STREAM OF TRAFFIC: The vehicles plunge underground from the Boulevard Jamar to pass under the busy Boulevard du Midi, in Brussels. This is one of the traffic improvements for the forthcoming exhibition.

HEADING DOWN TO THE TUNNEL: The tram comes down the slope towards the tunnel, the centre of which is an underground station known as Carrefour Midi.

The Brussels Exhibition opens in April. Among the many problems which the authorities in the Belgian capital have had to face has been that of coping with the inevitable increase of traffic in an already overcrowded city. Planners and engineers have brought considerable imagination to bear in their attempt to solve this question. In one of the busiest parts an underground tunnel and station for trams—reminiscent of London's old Kingsway structure—has been built. This should certainly ease the congestion on the junction of the Boulevard Jamar, the Boulevard du Midi and the Avenue du Midi. For other vehicular traffic there are also, at various busy points in the capital, overhead roads and underpasses.

THE TRAM STATION BELOW THE CENTRE OF BRUSSELS: The platforms of the Carrefour Midi are beside a Y-shaped formation of lines. Until the completion of this underground system the trams were a main cause of traffic blocks above ground.

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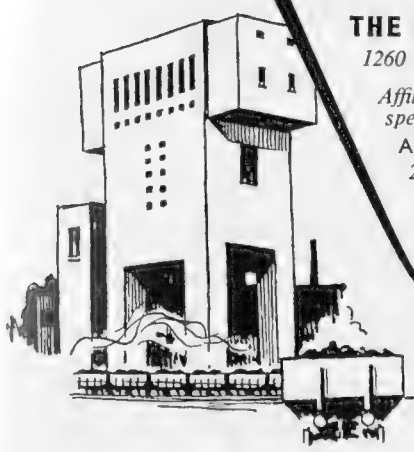

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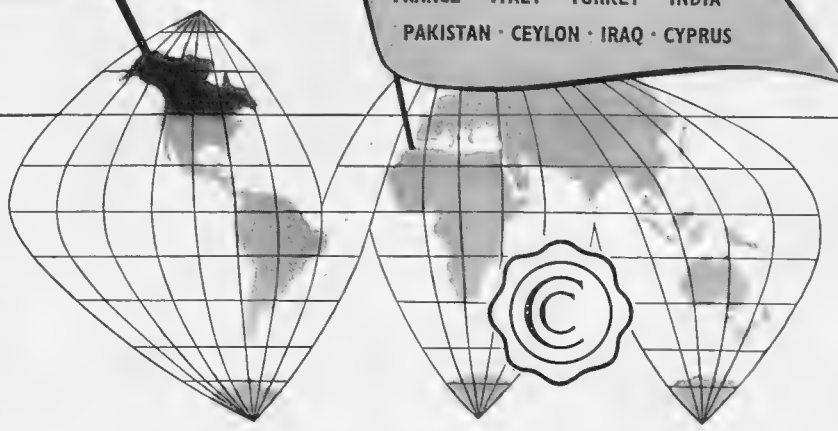

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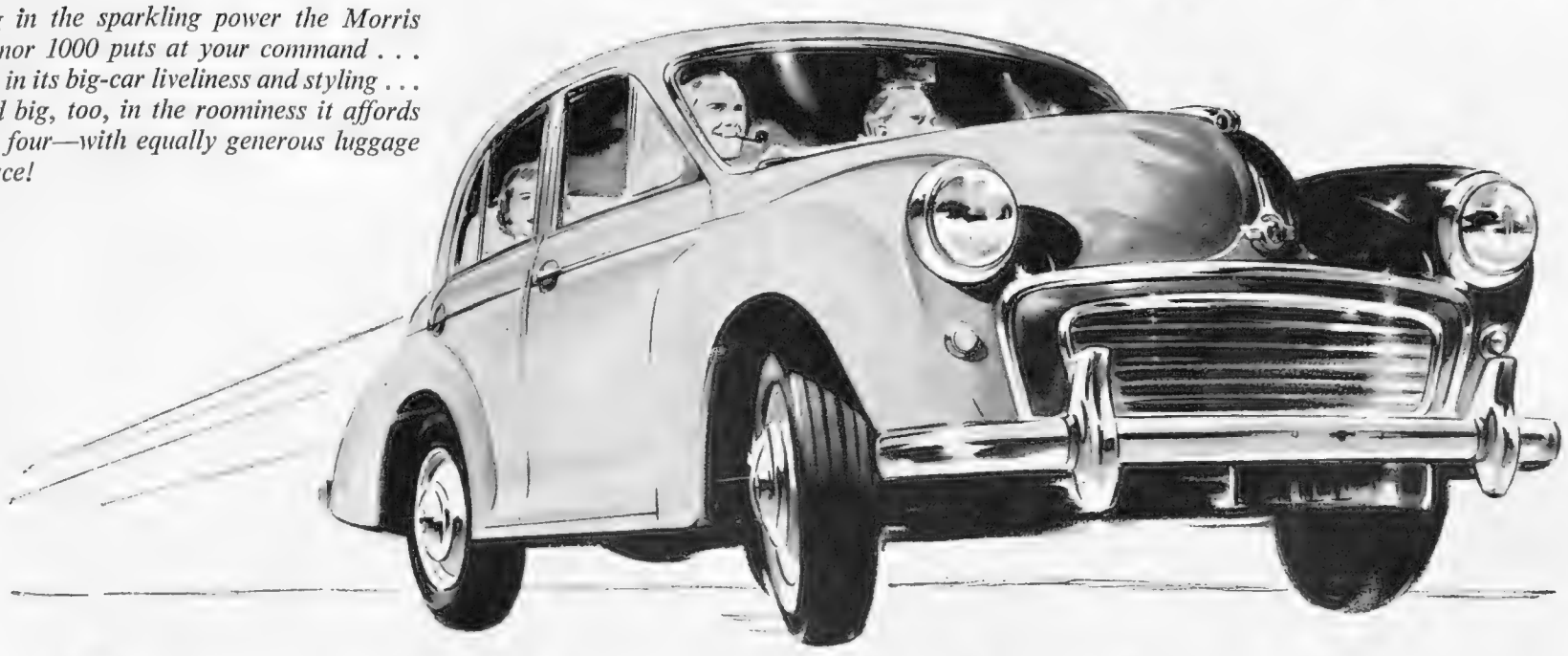

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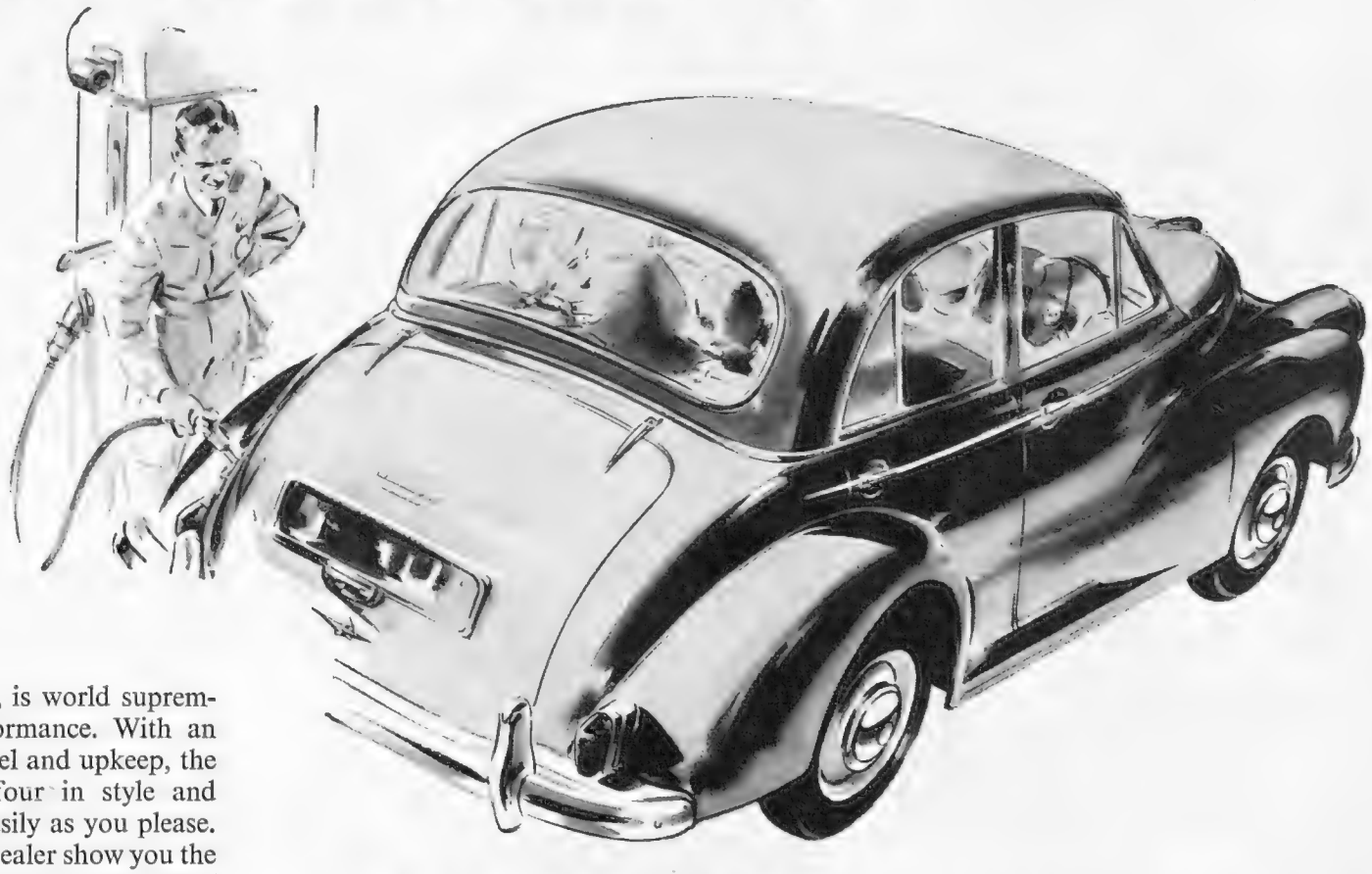

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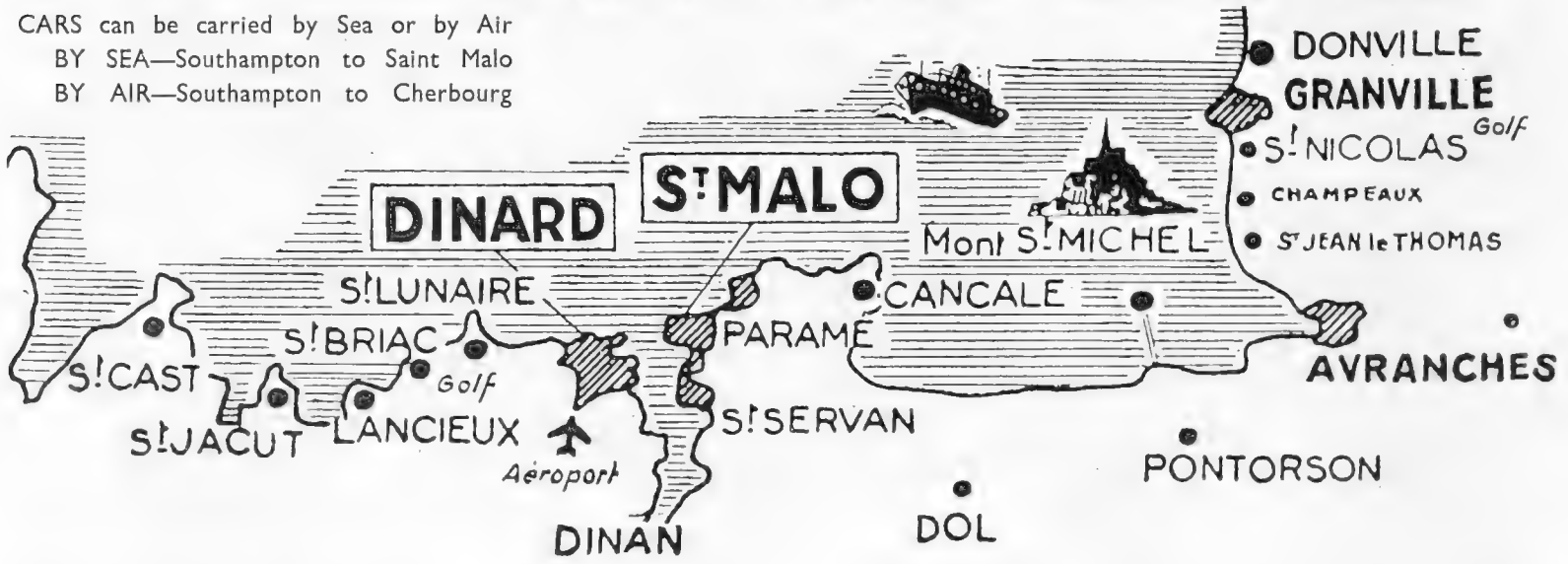

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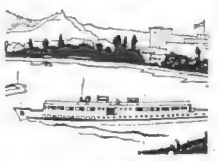

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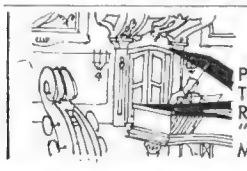

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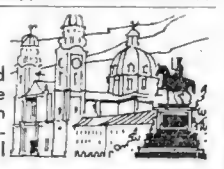

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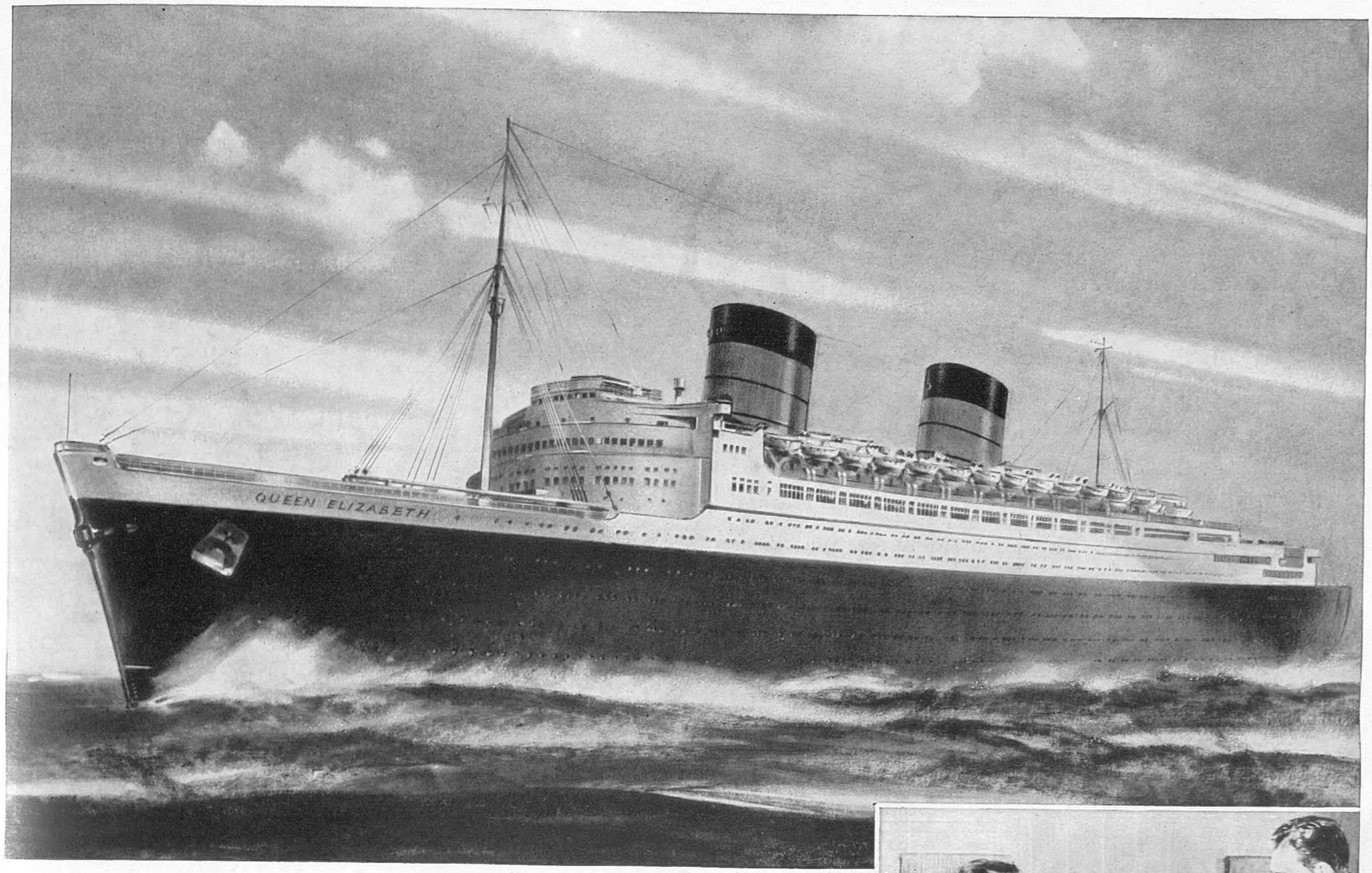

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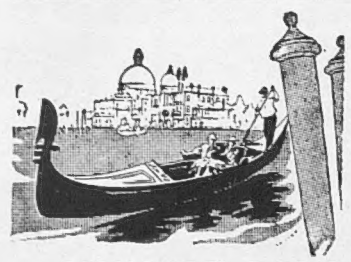

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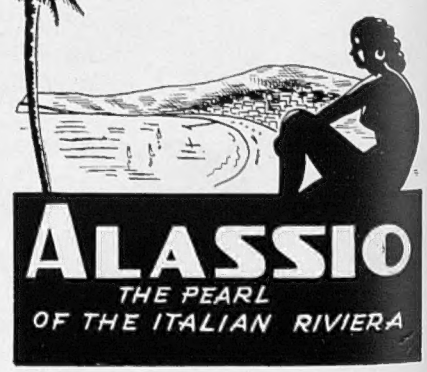

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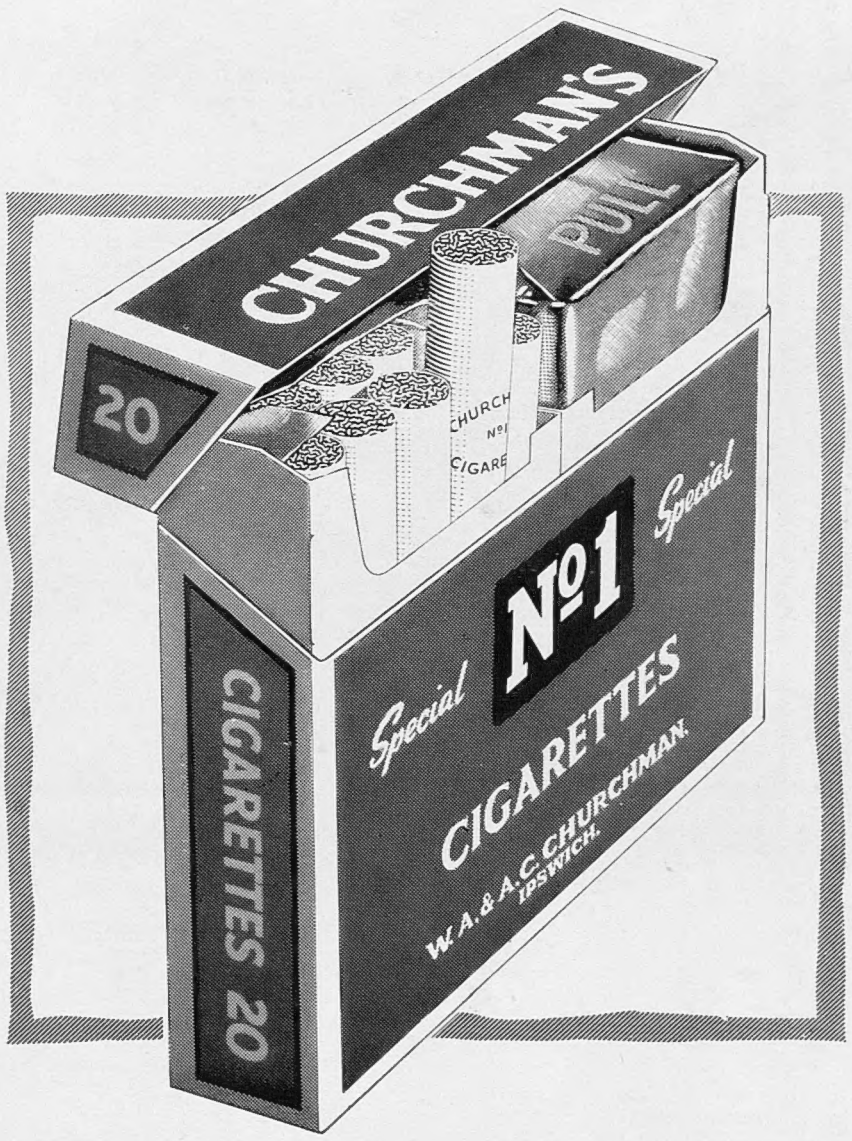

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